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U. S. DEPARTMENT OF COMMERCE
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WEATHER BUREAU — F. W. Reichelderfer, Chief

MONTHLY WEATHER REVIEW

MAY 1948

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Control times and locations of radiosonde observations are those indicated by red arrows based on rawins taken at 0300 G. C. T.

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MONTHLY WEATHER REVIEW

Editor, James E. Caskey, Jr.

VOL. 76, No. 5
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MAY 1948

CLOSED JULY 5, 1948
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METEOROLOGICAL AND CLIMATOLOGICAL DATA FOR MAY 1948

AEROLOGICAL OBSERVATIONS

[For description of change in Table 1 and charts, see REVIEW, January 1946, p. 6]

TABLE 1.—*Mean dynamic height (geopotential) in units of 0.98 dynamic meters, temperature in degrees centigrade, and relative humidity in percent, for standard pressures, as obtained by radiosondes during May 1948*

STATIONS AND MEAN SURFACE PRESSURES

Standard pressure surface (mb.)	Albany, N. Y. (1,002.0 mb.)				Albuquerque, N. Mex. (834.8 mb.)				Apalachicola, Fla. (1,013.8 mb.)				Atlanta, Ga. (979.3 mb.)				Big Spring, Tex. (923.5 mb.)				Bismarck, N. Dak. (955.6 mb.)				Boise, Idaho (911.7 mb.)			
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity
Surface	31	86	11.8	76	31	1,620	20.3	28	31	5	23.3	82	30	300	20.4	64	31	774	24.1	41	31	505	14.0	57	30	868	15.0	82
1,000	31	103	(*)	----	31	27	(*)	----	31	125	23.1	78	30	118	(*)	----	31	68	(*)	----	31	117	(*)	----	30	74	(*)	----
950	31	534	10.1	71	31	488	(*)	----	31	574	20.8	70	30	563	20.6	57	31	527	(*)	----	31	557	14.2	51	30	519	(*)	----
900	31	980	8.0	71	31	965	(*)	----	31	1,038	18.6	58	30	1,028	17.4	60	31	999	23.5	42	31	1,010	12.2	47	30	977	15.3	45
850	31	1,450	5.1	74	31	1,463	(*)	----	31	1,526	15.4	58	30	1,514	14.3	57	31	1,495	20.0	43	31	1,486	8.7	51	30	1,458	12.0	46
800	31	1,943	2.4	76	31	1,986	18.8	27	31	2,038	12.6	50	30	2,023	11.6	50	31	2,014	16.8	43	31	1,984	5.1	53	30	1,962	8.2	50
750	31	2,468	−.4	73	31	2,537	14.6	30	31	2,581	9.6	41	30	2,565	8.8	48	31	2,561	12.6	46	31	2,512	2.1	53	30	2,493	3.9	55
700	31	3,012	−3.0	68	31	3,114	9.7	35	31	3,146	6.3	37	30	3,128	5.4	44	31	3,136	8.7	41	31	3,062	−1.0	53	30	3,048	−.5	60
650	31	3,601	−6.0	65	31	3,724	4.5	41	31	3,748	2.6	34	30	3,730	1.5	45	31	3,795	4.0	41	31	3,650	−4.2	53	30	3,637	−5.0	61
600	30	4,213	−9.3	59	31	4,370	−1.0	48	31	4,392	−1.6	30	30	4,369	−2.4	44	31	4,389	−1.1	42	31	4,276	−8.2	56	30	4,261	−9.5	63
550	30	4,885	−13.3	55	31	5,056	−6.7	55	31	5,078	−6.0	31	30	5,054	−6.5	----	31	5,076	−5.9	39	31	4,946	−12.6	53	30	4,926	−14.3	60
500	28	5,596	−17.9	60	31	5,793	−12.7	61	31	5,817	−10.9	----	30	5,792	−11.5	----	31	5,819	−10.9	38	31	5,667	−17.7	51	30	5,642	−19.5	61
450	28	6,384	−22.9	----	31	6,592	−18.1	53	31	6,625	−16.5	----	30	6,596	−17.2	----	31	6,626	−16.2	35	31	6,451	−23.4	----	29	6,427	−24.9	----
400	28	7,228	−29.2	----	30	7,459	−24.3	----	31	7,493	−23.0	----	30	7,464	−23.5	----	30	7,497	−22.3	----	31	7,298	−29.6	----	29	7,270	−31.0	----
350	27	8,162	−36.4	----	30	8,419	−31.3	----	31	8,457	−30.2	----	29	8,426	−31.0	----	30	8,465	−29.4	----	31	8,236	−36.9	----	29	8,202	−38.2	----
300	27	9,214	−44.0	----	30	9,492	−39.4	----	31	9,534	−38.4	----	28	9,501	−39.5	----	30	9,546	−37.7	----	30	9,286	−44.8	----	29	9,245	−45.5	----
250	27	10,417	−51.0	----	30	10,715	−48.6	----	31	10,761	−47.9	----	28	10,722	−49.3	----	30	10,778	−47.1	----	30	10,484	−52.0	----	28	10,449	−51.0	----
200	25	11,834	−55.9	----	30	12,152	−56.9	----	31	12,197	−58.3	----	28	12,150	−59.6	----	29	12,222	−56.7	----	29	11,917	−55.6	----	25	11,885	−55.8	----
175	23	12,670	−55.8	----	30	12,991	−59.2	----	31	13,028	−62.7	----	26	12,974	−63.3	----	28	13,061	−59.7	----	28	12,764	−55.1	----	21	12,727	−53.7	----
150	17	13,654	−54.9	----	29	13,952	−60.0	----	31	13,971	−64.5	----	25	13,915	−63.9	----	22	14,018	−60.9	----	27	13,751	−55.0	----	19	13,720	−53.4	----
125	13	14,834	−56.2	----	27	15,082	−61.0	----	29	15,081	−66.2	----	25	15,031	−64.3	----	16	15,133	−61.6	----	25	14,913	−55.7	----	16	14,910	−56.0	----
100	11	16,244	−56.6	----	21	16,453	−62.8	----	20	16,436	−67.9	----	23	16,395	−64.9	----	6	16,475	−62.5	----	20	16,335	−57.6	----	7	16,370	−58.3	----
80	10	17,643	−56.9	----	8	17,819	−63.9	----	15	17,781	−67.3	----	19	17,748	−64.9	----					15	17,751	−58.5	----				
60	6	19,477	−57.8	----					7	19,525	−62.8	----	9	19,499	−61.0	----												
50	5	20,627	−57.1	----					6	20,653	−59.1	----																

	Brownsville, Tex. (1,010.0 mb.)				Buffalo, N. Y. (986.9 mb.)				Caribou, Maine (990.1 mb.)				Charleston, S. C. (1,012.1 mb.)				Ciudad Victoria, Mex. (969.9 mb.)				Columbia, Mo. (985.5 mb.)				Dodge City, Kans. (922.2 mb.)			
Surface	31	6	25.2	83	30	221	11.1	72	31	191	8.0	76	31	13	19.6	89	29	335	27.9	62	31	239	17.3	68	31	792	17.6	58
1,000	31	94	24.7	82	30	110	(*)	----	31	108	(*)	----	31	117	20.9	82	29	61	(*)	----	31	113	(*)	----	31	89	(*)	----
950	31	544	22.4	76	30	544	11.5	67	31	537	7.8	66	31	564	20.0	67	29	518	26.1	64	31	555	16.9	61	31	540	(*)	----
900	31	1,014	21.3	61	30	990	9.0	67	31	977	5.5	67	31	1,026	17.0	65	29	993	22.3	67	31	1,011	13.7	66	31	1,000	17.9	53
850	31	1,508	19.3	54	30	1,460	5.8	71	31	1,441	2.7	70	31	1,511	14.0	62	29	1,488	18.8	68	31	1,491	10.7	64	31	1,488	15.1	53
800	31	2,028	16.6	48	30	1,954	3.1	65	31	1,930	−.3	72	31	2,020	11.1	59	29	2,006	15.2	74	31	1,994	8.2	57	31	1,999	12.3	50
750	31	2,579	13.5	43	30	2,483	.5	56	31	2,450	−3.0	70	31	2,561	8.0	55	29	2,553	11.9	68	31	2,532	6.2	46	31	2,541	9.2	43
700	31	3,153	9.7	45	30	3,026	−2.2	53	31	2,988	−5.3	60	31	3,123	4.8	50	29	3,126	8.5	64	31	3,088	3.2	47	31	3,105	5.5	40
650	31	3,766	5.6	42	30	3,616	−5.0	48	31	3,574	−7.9	54	31	3,726	1.5	47	28	3,738	4.3	56	30	3,690	−.1	42	31	3,706	1.1	41
600	31	4,413	.8	42	30	4,236	−8.7	50	31	4,186	−10.9	50	31	4,364	−2.4	40	28	4,383	.3	56	30	4,325	−4.3	39	31	4,344	−3.6	40
550	31	5,104	−4.1	40	29	4,906	−12.8	51	31	4,852	−15.0	47	31	5,048	−6.6	----	28	5,077	−4.1	57	30	5,006	−8.9	----	31	5,025	−8.6	40
500	31	5,851	−9.4	41	29	5,625	−17.2	46	31	5,564	−19.6	49	31	5,788	−11.3	----	28	5,821	−9.1	56	30	5,737	−13.7	----	31	5,758	−13.8	47
450	31	6,663	−14.9	----	29	6,413	−22.5	----	31	6,341	−25.3	----	31	6,595	−16.7	----	28	6,640	−14.0	61	30	6,539	−19.1	----	31	6,558	−19.2	47
400	31	7,538	−21.0	----	28	7,263	−28.8	----	31	7,181	−31.7	----	31	7,463	−23.1	----	27	7,517	−19.8	51	30	7,397	−25.5	----	31	7,416	−25.4	----
350	31	8,511	−27.9	----	27	8,201	−35.8	----	31	8,112	−38.4	----	31	8,427	−30.5	----	27	8,494	−27.3	----	30	8,351	−32.7	----	31	8,370	−32.9	----
300	31	9,600	−36.0	----	27	9,255	−43.4	----	31	9,157	−44.8	----	31	9,503	−38.9	----	27	9,582	−35.5	----	30	9,418	−40.9	----	31	9,436	−41.2	----
250	31	10,840	−45.6	----	25	10,461	−51.3	----	31	10,359	−50.7	----	31	10,728	−48.9	----	27	10,830	−45.4	----	30	10,633	−50.1	----	28	10,647	−50.2	----
200	29	12,291	−55.8	----	22	11,917	−55.7	----	31	11,798	−54.3	----	31	12,158	−59.6	----	13	12,293	−55.7	----	29	12,056	−59.2	----	27	12,068	−58.9	----
175	26	13,136	−60.4	----	17	12,746	−56.2	----	30	12,654	−53.8	----	30	12,984	−63.4	----					26	12,882	−60.8	----	21	12,918	−61.1	----
150	22	14,092	−64.1	----	12	13,747	−55.4	----	28	13,643	−53.6	----	27	13,922	−63.9	----					23	13,833	−60.9	----	7	13,843	−59.7	----
125	13	15,202	−67.3	----					22	14,814	−54.1	----	24	15,036	−63.8	----					14	14,986	−61.3	----				
100									13	16,233	−54.9	----	19	16,391	−64.6	----					10	16,364	−62.2	----				
80													14	17,746	−64.2	----					5	17,719	−61.8	----				
60													11	19,524	−60.3	----												

See footnotes at end of table.

TABLE 1.—*Mean dynamic height (geopotential) in units of 0.98 dynamic meters, temperature in degrees centigrade, and relative humidity in percent, for standard pressures, as obtained by radiosondes during May 1948*—Continued

Standard pressure surface (mb.)	El Paso, Tex. (877.4 mb.)				Ely, Nev. (805.4 mb.)				Fort Worth, Tex. (986.9 mb.)				Glasgow, Mont. (938.2 mb.)				Grand Junction, Colo. (848.2 mb.)				Great Falls, Mont. (885.1 mb.)				Greensboro, N. C. (982.3 mb.)			
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity
Surface	31	1,195	25.0	19	30	1,908	12.4	32	31	211	22.9	67	31	648	14.3	54	31	1,474	17.9	26	31	1,128	12.0	61	31	273	17.2	75
1,000	31	26	(*)	----	30	48	(*)	----	31	95	(*)	----	31	102	(*)	----	31	33	(*)	----	31	89	(*)	----	31	120	(*)	----
950	31	498	(*)	----	30	498	(*)	----	31	549	21.8	64	31	542	(*)	----	31	495	(*)	----	31	533	(*)	----	31	563	18.0	64
900	31	979	(*)	----	30	966	(*)	----	31	1,011	18.9	66	31	998	13.4	49	31	966	(*)	----	31	993	(*)	----	31	1,021	15.3	63
850	31	1,474	24.0	20	30	1,451	(*)	----	31	1,500	16.3	61	31	1,476	9.9	52	31	1,455	(*)	----	31	1,466	10.5	55	31	1,503	11.9	65
800	31	1,997	19.8	21	30	1,965	13.0	30	31	2,014	14.1	48	31	1,977	6.6	56	31	1,974	16.4	25	31	1,968	7.0	58	31	2,008	8.9	63
750	31	2,550	15.1	24	30	2,505	8.8	34	31	2,564	11.0	43	31	2,508	3.2	58	31	2,518	11.7	28	31	2,498	3.1	61	31	2,548	6.1	53
700	31	3,126	10.0	29	30	3,068	3.7	41	31	3,128	7.4	40	31	3,059	−.2	56	31	3,089	6.7	34	31	3,050	−.7	63	31	3,103	2.9	54
650	31	3,735	4.6	34	30	3,664	−1.5	49	31	3,737	3.2	39	31	3,652	−3.9	53	31	3,691	1.3	42	31	3,642	−4.9	65	31	3,702	−.8	51
600	31	4,381	−.8	39	30	4,295	−7.1	59	31	4,377	−1.2	37	31	4,275	−8.2	53	31	4,330	−4.2	50	31	4,263	−9.2	65	31	4,335	−4.3	48
550	31	5,068	−6.1	41	30	4,966	−12.6	66	30	5,069	−5.9	36	31	4,945	−12.7	47	31	5,008	−9.6	55	31	4,930	−13.8	62	31	5,014	−8.4	46
500	30	5,808	−11.3	----	30	5,688	−17.2	57	30	5,805	−11.2	38	31	5,666	−17.8	45	31	5,737	−15.4	58	30	5,651	−19.2	57	30	5,748	−13.0	50
450	30	6,618	−16.8	----	30	6,476	−22.7	----	30	6,614	−16.8	----	31	6,451	−23.5	----	31	6,533	−21.0	----	30	6,430	−24.9	----	30	6,551	−18.5	48
400	30	7,482	−23.5	----	30	7,324	−28.9	----	30	7,479	−23.5	----	30	7,293	−30.4	----	31	7,384	−27.3	----	30	7,271	−31.1	----	30	7,412	−24.7	----
350	29	8,443	−31.0	----	30	8,265	−35.8	----	30	8,440	−30.9	----	29	8,230	−37.5	----	31	8,331	−34.4	----	30	8,203	−38.4	----	30	8,369	−32.0	----
300	29	9,517	−39.6	----	30	9,319	−43.3	----	30	9,514	−39.3	----	29	9,275	−45.8	----	31	9,390	−42.6	----	30	9,245	−45.9	----	30	9,438	−40.3	----
250	29	10,738	−49.6	----	30	10,526	−50.6	----	29	10,734	−49.0	----	27	10,480	−52.5	----	29	10,605	−50.8	----	30	10,438	−52.7	----	29	10,655	−49.4	----
200	26	12,166	−58.9	----	30	11,960	−55.8	----	29	12,165	−59.0	----	22	11,943	−56.6	----	28	12,026	−57.4	----	28	11,869	−55.2	----	28	12,088	−58.7	----
175	23	12,995	−62.3	----	29	12,803	−56.7	----	29	12,995	−62.6	----	21	12,797	−56.1	----	27	12,872	−58.0	----	23	12,713	−53.3	----	28	12,921	−61.3	----
150	21	13,939	−63.8	----	25	13,766	−56.4	----	29	13,941	−64.0	----	21	13,780	−54.8	----	21	13,841	−57.3	----	19	13,699	−52.8	----	26	13,870	−61.2	----
125	17	15,043	−65.1	----	22	14,931	−58.6	----	26	15,059	−64.8	----	20	14,934	−55.7	----	14	14,998	−58.3	----	12	14,878	−55.4	----	21	15,022	−61.0	----
100	10	16,390	−66.5	----	13	16,330	−59.6	----	18	16,415	−65.8	----	16	16,346	−56.9	----					9	16,319	−57.6	----	15	16,409	−62.1	----
80									12	17,759	−66.6	----	10	17,756	−57.6	----					7	17,725	−58.2	----	8	17,765	−61.5	----
60													7	19,583	−56.8	----												
50													5	20,783	−56.8	----												

Standard pressure surface (mb.)	Hatteras, N. C. (1,013.9 mb.)				Havana, Cuba [1] (----- mb.)				Honolulu, T. H. (1,016.0 mb.)				Huntington, W. Va. (993.5 mb.)				International Falls, Minn. (974.9 mb.)				Joliet, Ill. (993.9 mb.)				Lake Charles, La. (1,012.2 mb.)			
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity
Surface	31	3	20.5	77	----	----	----	----	31	3	26.3	62	31	172	14.6	81	31	360	10.8	57	31	178	10.6	73	31	5	22.8	82
1,000	31	121	20.2	73	----	----	----	----	31	143	23.8	65	31	116	(*)	----	31	146	(*)	----	31	126	(*)	----	31	111	23.4	77
950	31	567	17.7	67	----	----	----	----	31	591	20.0	73	31	558	15.7	67	31	577	12.4	47	31	559	11.8	65	31	562	20.6	75
900	31	1,023	14.6	67	----	----	----	----	31	1,054	16.6	77	31	1,010	12.8	66	31	1,028	9.4	49	31	1,008	10.7	62	31	1,025	18.0	72
850	31	1,505	11.7	64	----	----	----	----	31	1,539	14.1	73	31	1,487	9.8	67	31	1,498	5.8	53	31	1,482	8.0	62	31	1,513	15.5	60
800	31	2,010	9.0	58	----	----	----	----	31	2,050	12.2	55	31	1,989	7.0	61	31	1,991	2.5	55	31	1,980	5.2	63	31	2,025	13.8	43
750	31	2,546	6.8	50	----	----	----	----	31	2,595	10.6	35	31	2,525	3.9	55	31	2,515	−.3	50	31	2,512	2.7	60	31	2,573	11.1	39
700	31	3,106	3.5	50	----	----	----	----	31	3,161	8.2	30	31	3,074	1.0	50	31	3,063	−2.9	46	31	3,061	.1	52	31	3,140	7.8	39
650	30	3,705	.2	47	----	----	----	----	31	3,775	5.3	24	31	3,671	−2.0	45	31	3,643	−6.3	44	31	3,658	−3.0	49	31	3,748	3.9	38
600	30	4,342	−3.6	48	----	----	----	----	31	4,419	1.7	----	30	4,299	−6.0	48	31	4,265	−10.0	41	31	4,281	−6.6	50	31	4,392	−.6	38
550	30	5,025	−7.6	48	----	----	----	----	31	5,114	−2.6	----	30	4,979	−10.1	47	31	4,932	−14.0	39	31	4,960	−10.8	50	31	5,080	−5.5	39
500	30	5,760	−12.3	44	----	----	----	----	31	5,863	−7.6	----	30	5,706	−14.6	47	31	5,647	−18.7	37	31	5,682	−15.7	48	31	5,821	−10.7	----
450	30	6,562	−17.8	42	----	----	----	----	31	6,683	−13.4	----	30	6,503	−20.0	45	31	6,427	−24.5	----	31	6,474	−21.5	----	31	6,629	−16.3	----
400	30	7,427	−24.0	----	----	----	----	----	31	7,562	−19.7	----	30	7,359	−26.2	----	31	7,271	−30.7	----	31	7,325	−28.0	----	31	7,499	−22.9	----
350	29	8,387	−31.4	----	----	----	----	----	31	8,539	−26.8	----	30	8,311	−33.4	----	31	8,205	−37.9	----	30	8,270	−35.0	----	31	8,463	−30.2	----
300	29	9,459	−39.4	----	----	----	----	----	31	9,632	−35.1	----	29	9,378	−41.3	----	31	9,249	−45.6	----	30	9,326	−43.2	----	31	9,541	−38.9	----
250	27	10,683	−48.6	----	----	----	----	----	31	10,878	−44.5	----	27	10,586	−50.8	----	31	10,444	−51.9	----	28	10,539	−50.8	----	31	10,763	−48.8	----
200	25	12,132	−58.3	----	----	----	----	----	30	12,340	−54.3	----	24	12,018	−58.9	----	31	11,882	−53.1	----	25	11,962	−57.6	----	31	12,194	−59.3	----
175	23	12,970	−63.1	----	----	----	----	----	29	13,184	−59.1	----	21	12,861	−61.0	----	31	12,743	−52.7	----	22	12,805	−58.3	----	31	13,021	−63.2	----
150	15	13,915	−63.5	----	----	----	----	----	29	14,138	−64.1	----	16	13,820	−61.0	----	29	13,740	−52.6	----	16	13,756	−58.1	----	29	13,960	−65.2	----
125	5	15,045	−61.5	----	----	----	----	----	27	15,242	−67.7	----	14	14,942	−59.9	----	28	14,918	−54.0	----	8	14,912	−58.7	----	26	15,068	−66.9	----
100	----	----	----	----	----	----	----	----	23	16,574	−69.6	----	11	16,322	−60.1	----	25	16,338	−55.1	----	----	----	----	----	21	16,406	−68.9	----
80	----	----	----	----	----	----	----	----	17	17,907	−67.5	----	6	17,695	−59.8	----	17	17,747	−55.4	----	----	----	----	----	18	17,740	−68.4	----
60	----	----	----	----	----	----	----	----	15	19,653	−63.5	----	5	19,494	−59.0	----	5	19,589	−55.4	----	----	----	----	----	10	19,478	−63.9	----
50	----	----	----	----	----	----	----	----	15	20,778	−60.5	----	----	----	----	----	----	----	----	----	----	----	----	----	5	20,616	−62.2	----
40	----	----	----	----	----	----	----	----	11	22,184	−57.1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Standard pressure surface (mb.)	Lander, Wyo. (826.6 mb.)				Las Vegas, Nev. (940.8 mb.)				Little Rock, Ark. (1,003.8 mb.)				Mazatlan, Mex. (1,006.6 mb.)				Medford, Oreg. (967.5 mb.)				Merida, Mex. (1,008.3 mb.)				Miami, Fla. (1,014.6 mb.)			
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity
Surface	31	1,696	12.8	41	31	574	25.7	14	31	79	19.9	77	31	14	27.3	69	31	401	13.5	64	31	27	27.1	72	31	4	24.1	82
1,000	31	58	(*)	----	31	30	(*)	----	31	112	20.1	74	31	72	26.6	67	31	121	(*)	----	31	100	26.4	72	31	132	24.0	79
950	31	508	(*)	----	31	489	(*)	----	31	557	19.3	67	31	529	24.4	47	31	559	12.7	59	31	554	24.5	66	31	587	21.2	76
900	31	974	(*)	----	31	963	24.1	----	31	1,018	16.2	70	31	997	24.1	37	31	1,005	9.2	63	31	1,026	21.7	67	31	1,047	18.7	66
850	31	1,458	(*)	----	31	1,458	19.8	----	31	1,502	13.3	69	31	1,495	21.6	36	30	1,475	5.6	70	31	1,520	18.2	69	31	1,536	15.6	67
800	31	1,971	12.5	37	31	1,975	15.0	19	31	2,011	11.2	59	31	2,018	18.4	34	30	1,968	2.0	77	31	2,038	15.1	67	31	2,048	12.8	58
750	31	2,510	8.1	40	31	2,519	10.1	23	31	2,553	8.9	50	31	2,571	14.6	35	30	2,493	−1.5	79	31	2,583	11.7	61	31	2,594	9.8	53
700	31	3,072	3.4	46	31	3,084	5.2	26	31	3,115	5.7	46	31	3,147	10.5	36	30	3,033	−4.7	76	31	3,156	8.5	53	31	3,158	6.6	52
650	31	3,670	−1.5	50	31	3,686	.4	29	31	3,719	2.0	42	31	3,760	6.0	39	30	3,619	−7.9	66	31	3,766	5.0	48	31	3,765	3.3	47
600	31	4,300	−6.5	55	31	4,321	−4.0	30	31	4,359	−1.9	45	31	4,410	1.5	40	29	4,228	−11.8	61	30	4,415	1.5	44	31	4,408	−.5	43
550	31	4,973	−11.8	56	31	5,003	−8.8	30	30	5,046	−6.2	41	31	5,102	−3.2	37	29	4,887	−16.2	56	30	5,109	−2.6	44	31	5,099	−4.5	42
500	31	5,695	−17.4	55	31	5,733	−13.9	30	30	5,786	−11.2	42	31	5,853	−8.3	34	29	5,600	−21.1	----	30	5,860	−7.0	38	31	5,844	−9.2	44
450	31	6,483	−23.2	----	31	6,531	−19.8	----	30	6,594	−16.7	----	31	6,670	−13.4	----	29	6,374	−26.2	----	29	6,679	−12.5	38	31	6,599	−14.7	44
400	31	7,327	−29.4	----	31	7,387	−26.2	----	30	7,462	−23.0	----	31	7,551	−19.6	----	29	7,212	−32.0	----	29	7,563	−18.5	----	30	7,535	−20.7	----
350	31	8,267	−36.3	----	31	8,338	−33.6	----	30	8,426	−30.3	----	30	8,529	−27.2	----	29	8,142	−38.6	----	28	8,544	−25.8	----	30	8,509	−27.6	----
300	31	9,319	−43.9	----	31	9,402	−41.6	----	30	9,503	−38.5	----	29	9,618	−35.6	----	29	9,184	−45.9	----	28	9,640	−34.6	----	30	9,598	−35.8	----
250	31	10,520	−51.6	----	31	10,614	−50.3	----	30	10,730	−48.0	----	29	10,861	−45.0	----	27	10,384	−50.8	----	28	10,887	−44.6	----	30	10,839	−45.6	----
200	21	11,952	−57.5	----	29	12,051	−56.9	----	29	12,166	−58.3	----	19	12,318	−55.6	----	27	11,824	−54.5	----	26	12,341	−55.5	----	30	12,291	−56.1	----
175	15	12,779	−55.2	----	22	12,887	−57.0	----	29	12,998	−62.0	----	13	13,154	−61.8	----	27	12,679	−54.2	----	22	13,174	−61.4	----	28	13,128	−60.9	----
150	7	13,756	−55.3	----	15	13,848	−56.1	----	26	13,939	−62.7	----	----	----	----	----	24	13,662	−54.1	----	16	14,109	−67.0	----	24	14,079	−64.7	----
125	----	----	----	----	8	14,997	−57.9	----	24	15,056	−62.8	----	----	----	----	----	23	14,824	−55.5	----	----	----	----	----	20	15,184	−67.6	----
100	----	----	----	----	----	----	----	----	15	16,435	−63.1	----	----	----	----	----	20	16,234	−57.0	----	----	----	----	----	11	16,514	−70.5	----
80	----	----	----	----	----	----	----	----	11	17,778	−63.1	----	----	----	----	----	13	17,606	−58.2	----	----	----	----	----	5	17,835	−69.0	----
60	----	----	----	----	----	----	----	----	6	19,528	−62.2	----	----	----	----	----	5	19,394	−57.1	----	----	----	----	----	----	----	----	----

See footnotes at end of table.

TABLE 1.—*Mean dynamic height (geopotential) in units of 0.98 dynamic meters, temperature in degrees centigrade, and relative humidity in percent, for standard pressures, as obtained by radiosondes during May 1948*—Continued

Standard pressure surface (mb.)	Nantucket, Mass. (1,011.4 mb.)				Nashville, Tenn. (992.7 mb.)				New Orleans, La. (1,013.1 mb.)				North Platte, Nebr. (915.5 mb.)				Oakland, Calif. (1,015.5 mb.)				Ogden, Utah (860.6 mb.)				Oklahoma City, Okla. (966.7 mb.)			
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity
Surface	30	14	9.1	93	31	180	19.2	67	31	2	22.8	80	31	849	15.9	58	31	6	13.7	73	31	1,355	15.7	41	31	391	19.5	76
1,000	30	107	10.4	89	31	117	(*)	----	31	116	23.5	74	31	87	(*)	----	31	135	12.4	75	31	56	(*)	----	31	96	(*)	----
950	30	540	10.9	79	31	559	18.1	62	31	565	21.2	69	31	534	(*)	----	31	570	10.4	72	31	509	(*)	----	31	540	20.2	69
900	30	987	9.1	76	31	1,019	15.0	62	31	1,030	18.3	65	31	994	16.1	55	31	1,014	9.6	60	31	974	(*)	----	31	1,006	17.5	68
850	30	1,459	7.2	74	31	1,501	12.1	61	31	1,518	15.1	63	31	1,478	13.5	55	31	1,487	7.7	51	31	1,460	15.7	36	31	1,493	15.0	62
800	30	1,955	4.6	72	31	2,007	9.8	50	31	2,030	12.7	44	31	1,986	10.3	58	31	1,984	5.2	48	31	1,971	12.3	34	31	2,005	12.7	53
750	30	2,482	1.8	65	31	2,545	7.0	49	31	2,577	10.5	32	31	2,526	7.0	55	31	2,517	2.5	43	31	2,511	7.9	37	31	2,550	9.9	48
700	30	3,033	−.9	62	31	3,105	4.3	45	31	3,141	7.3	30	31	3,084	3.0	55	31	3,063	−.4	42	31	3,072	3.1	42	31	3,114	6.3	46
650	29	3,626	−4.1	55	30	3,706	.4	47	31	3,749	3.5	28	31	3,684	−1.3	55	31	3,658	−3.6	41	31	3,668	−1.9	49	31	3,721	2.2	46
600	29	4,253	−7.5	46	30	4,342	−3.6	45	31	4,391	−.7	31	31	4,313	−5.7	55	31	4,281	−6.9	42	31	4,298	−6.9	59	31	4,362	−2.2	45
550	29	4,922	−11.4	44	30	5,024	−7.9	45	31	5,081	−5.1	----	30	4,996	−10.2	49	31	4,960	−11.2	43	31	4,971	−12.1	64	31	5,045	−6.7	41
500	28	5,650	−16.2	43	29	5,760	−12.7	40	31	5,822	−10.1	----	30	5,720	−15.4	51	31	5,681	−16.0	48	31	5,692	−17.5	64	31	5,782	−11.6	----
450	28	6,446	−21.2	----	29	6,562	−18.1	----	31	6,637	−15.7	----	30	6,516	−21.0	----	31	6,477	−21.3	----	31	6,480	−23.3	----	30	6,587	−17.3	----
400	28	7,295	−27.0	----	29	7,426	−24.5	----	31	7,505	−22.1	----	30	7,366	−27.3	----	31	7,326	−27.5	----	31	7,325	−29.3	----	29	7,455	−23.8	----
350	26	8,237	−33.4	----	29	8,384	−31.7	----	31	8,473	−29.3	----	29	8,308	−34.5	----	30	8,272	−34.2	----	31	8,264	−36.4	----	27	8,416	−31.2	----
300	26	9,302	−40.8	----	28	9,458	−39.7	----	31	9,554	−37.7	----	28	9,369	−42.8	----	30	9,334	−41.3	----	31	9,315	−43.9	----	25	9,489	−39.4	----
250	23	10,548	−49.0	----	28	10,679	−49.0	----	31	10,786	−47.2	----	28	10,575	−51.1	----	30	10,551	−48.7	----	30	10,518	−51.4	----	20	10,712	−48.5	----
200	16	12,033	−57.0	----	26	12,114	−58.7	----	31	12,227	−57.7	----	26	11,995	−57.9	----	30	11,995	−55.2	----	30	11,948	−56.9	----	11	12,200	−57.8	----
175	8	12,840	−59.2	----	24	12,946	−61.7	----	30	13,059	−61.8	----	25	12,821	−59.3	----	28	12,844	−57.0	----	26	12,788	−56.3	----	8	13,059	−61.5	----
150	6	13,821	−59.4	----	16	13,893	−60.7	----	30	14,006	−64.1	----	23	13,780	−58.7	----	27	13,816	−56.7	----	19	13,751	−54.4	----				----
125	5	14,966	−58.8	----	11	15,006	−61.2	----	26	15,118	−64.8	----	20	14,909	−58.5	----	25	14,968	−57.6	----	12	14,889	−55.7	----				----
100				----				----	21	16,467	−66.8	----	14	16,304	−60.8	----	19	16,354	−59.7	----	5	16,264	−56.5	----				----
80				----				----	16	17,802	−67.2	----	8	17,690	−62.0	----	16	17,734	−60.1	----				----				----
60				----				----				----	6	19,458	−60.2	----	10	19,522	−59.3	----				----				----
50				----				----				----				----	7	20,675	−58.1	----				----				----

Standard pressure surface (mb.)	Omaha, Nebr. (977.5 mb.)				Phoenix, Ariz. (968.0 mb.)				Pittsburgh, Pa. (968.3 mb.)				Portland, Maine (1,011.1 mb.)				Rapid City, S. Dak. (902.3 mb.)				St. Cloud, Minn. (977.9 mb.)				San Antonio, Tex. (982.8 mb.)			
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity
Surface	31	308	18.2	60	31	339	26.7	19	31	382	13.8	70	31	20	8.0	86	31	980	11.7	70	31	317	12.6	61	31	240	25.7	65
1,000	31	111	(*)	----	31	50	(*)	----	31	108	(*)	----	31	111	9.0	83	31	106	(*)	----	31	128	(*)	----	31	83	(*)	----
950	31	551	17.1	53	31	510	28.6	15	31	548	13.5	69	31	539	8.0	77	31	546	(*)	----	31	568	13.8	50	31	541	23.8	67
900	31	1,010	14.1	56	31	981	24.9	15	31	997	11.1	66	31	981	6.1	78	31	1,003	(*)	----	31	1,015	10.8	51	31	1,010	20.9	70
850	31	1,490	11.2	58	31	1,478	20.7	16	31	1,472	8.3	64	31	1,448	3.7	80	31	1,481	11.5	54	31	1,488	7.5	54	31	1,503	17.9	70
800	31	1,994	8.2	58	31	1,996	16.3	20	31	1,970	5.0	65	31	1,939	1.7	78	31	1,985	8.6	58	31	1,984	4.3	58	31	2,020	15.5	58
750	31	2,528	5.1	52	31	2,545	11.7	22	31	2,502	2.0	62	31	2,462	−.5	74	31	2,520	5.3	60	31	2,515	1.8	53	31	2,573	12.8	43
700	31	3,085	2.1	46	31	3,112	7.2	22	31	3,049	−.7	55	31	3,007	−3.0	71	31	3,076	1.7	62	31	3,062	−1.1	47	31	3,141	9.4	37
650	31	3,680	−1.5	40	31	3,718	2.8	21	31	3,643	−3.8	52	31	3,595	−5.8	66	31	3,673	−2.0	59	31	3,652	−4.4	46	31	3,756	5.1	34
600	31	4,312	−5.7	39	31	4,359	−1.7	----	31	4,266	−7.3	48	30	4,213	−9.5	66	31	4,302	−6.5	58	31	4,276	−8.1	46	31	4,399	.5	32
550	31	4,991	−10.1	42	31	5,046	−6.6	----	31	4,947	−11.2	42	30	4,882	−13.6	62	31	4,978	−11.2	56	31	4,948	−12.1	42	31	5,091	−4.7	37
500	31	5,718	−15.2	43	31	5,783	−11.9	----	31	5,665	−15.9	----	30	5,599	−18.2	58	31	5,701	−16.3	55	31	5,670	−16.9	42	31	5,833	−9.6	32
450	31	6,513	−20.8	----	31	6,587	−17.9	----	30	6,463	−21.2	----	30	6,380	−23.7	----	30	6,489	−22.1	----	31	6,458	−22.7	----	31	6,648	−15.3	----
400	31	7,367	−27.1	----	31	7,451	−24.3	----	30	7,312	−27.7	----	29	7,221	−30.0	----	29	7,332	−28.4	----	31	7,307	−28.9	----	31	7,517	−22.0	----
350	31	8,315	−34.6	----	29	8,406	−32.0	----	30	8,257	−34.9	----	29	8,159	−36.5	----	29	8,274	−35.7	----	31	8,247	−36.0	----	30	8,486	−28.9	----
300	31	9,373	−42.7	----	27	9,478	−40.6	----	30	9,315	−42.8	----	28	9,202	−44.2	----	29	9,326	−43.9	----	31	9,299	−44.1	----	30	9,570	−36.8	----
250	31	10,580	−51.1	----	26	10,693	−50.0	----	30	10,523	−51.0	----	26	10,409	−51.5	----	29	10,527	−51.7	----	27	10,522	−51.3	----	30	10,807	−46.1	----
200	30	12,009	−58.6	----	23	12,129	−58.2	----	24	11,963	−58.5	----	24	11,830	−56.4	----	29	11,956	−56.6	----	21	11,944	−54.8	----	29	12,260	−55.7	----
175	30	12,845	−59.5	----	20	12,962	−60.3	----	19	12,762	−58.2	----	24	12,677	−55.8	----	28	12,797	−55.7	----	16	12,783	−54.2	----	28	13,101	−60.0	----
150	29	13,817	−58.8	----	17	13,914	−60.6	----	12	13,710	−58.9	----	24	13,656	−56.4	----	28	13,780	−55.1	----	9	13,792	−53.7	----	25	14,058	−62.6	----
125	29	14,959	−59.7	----	12	15,022	−62.3	----				----	20	14,812	−57.1	----	25	14,934	−56.2	----				----	22	15,177	−64.4	----
100	23	16,341	−60.9	----	8	16,370	−64.2	----				----	15	16,235	−57.6	----	20	16,325	−57.4	----				----	11	16,521	−67.4	----
80	18	17,735	−60.7	----	5	17,728	−63.8	----				----	12	17,675	−58.1	----	7	17,770	−58.2	----				----				----
60	12	19,550	−59.5	----	5	19,498	−62.3	----				----	6	19,518	−58.4	----				----				----				----
50	7	20,689	−58.0	----				----				----				----				----				----				----

Standard pressure surface (mb.)	San Juan, P. R. (1,013.4 mb.)				Santa Maria, Calif. (1,006.5 mb.)				Sault Ste. Marie, Mich. (988.0 mb.)				Spokane, Wash. (929.2 mb.)				Swan Island, W. I. (1,011.1 mb.)				Tacubaya, Mexico (773.2 mb.)				Tampa, Fla. (1,013.9 mb.)			
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity
Surface	31	15	25.8	84	31	71	13.5	73	31	221	6.6	73	31	721	12.6	68	31	9	26.3	83	31	2,306	17.8	58	31	9	23.6	77
1,000	31	133	24.8	84	31	126	12.8	73	31	121	(*)	----	31	99	(*)	----	31	107	25.8	83	31	38	(*)	----	31	130	23.4	76
950	31	587	21.6	84	31	562	12.2	66	31	549	8.9	54	31	536	(*)	----	31	565	22.2	85	31	504	(*)	----	31	582	21.2	63
900	31	1,050	18.5	84	31	1,010	12.5	52	31	992	6.7	54	31	988	10.5	67	31	1,028	19.7	77	31	982	(*)	----	31	1,044	18.6	57
850	31	1,539	15.8	81	31	1,487	10.1	52	31	1,459	3.7	58	31	1,461	7.0	68	31	1,519	17.1	70	31	1,482	(*)	----	31	1,532	15.3	58
800	31	2,053	13.4	73	31	1,989	7.4	47	31	1,948	1.0	60	31	1,957	3.5	72	31	2,035	14.4	65	31	2,013	(*)	----	31	2,043	12.2	55
750	31	2,599	10.8	65	31	2,525	5.4	33	31	2,470	−1.1	54	30	2,482	.1	73	31	2,585	11.6	53	31	2,567	16.1	57	31	2,584	8.9	51
700	31	3,169	8.3	51	31	3,079	2.5	29	31	3,014	−4.0	51	30	3,029	−3.3	74	31	3,153	8.3	50	31	3,149	11.7	61	31	3,149	5.7	46
650	31	3,782	4.8	45	30	3,675	−1.0	----	31	3,599	−7.1	54	30	3,616	−6.8	70	31	3,768	5.4	40	31	3,767	6.8	69	31	3,752	2.3	37
600	31	4,426	.9	42	30	4,309	−4.8	----	31	4,216	−10.0	52	30	4,232	−10.7	69	31	4,412	1.8	39	31	4,418	1.9	76	31	4,393	−1.6	32
550	31	5,124	−2.8	43	29	4,992	−8.6	----	31	4,885	−14.2	51	30	4,897	−15.2	67	31	5,109	−2.2	34	29	5,117	−3.0	82	31	5,060	−5.6	----
500	30	5,869	−7.4	46	29	5,723	−13.2	----	31	5,599	−19.1	45	30	5,609	−20.2	68	31	5,859	−6.5	37	29	5,864	−7.7	70	30	5,821	−10.5	----
450	30	6,693	−12.5	51	28	6,526	−18.8	----	31	6,383	−24.6	----	30	6,387	−25.8	----	31	6,087	−11.2	34	29	6,686	−12.5	65	30	6,629	−16.0	----
400	30	7,572	−18.5	54	28	7,388	−25.3	----	30	7,222	−30.9	----	30	7,225	−31.8	----	31	7,572	−17.0	----	29	7,569	−17.9	58	30	7,501	−22.2	----
350	30	8,554	−25.4	----	27	8,341	−32.5	----	30	8,155	−38.0	----	30	8,195	−38.9	----	31	8,559	−24.1	----	27	8,550	−25.3	----	28	8,467	−29.3	----
300	29	9,654	−33.8	----	26	9,409	−40.5	----	30	9,201	−45.4	----	30	9,195	−46.2	----	31	9,664	−32.4	----	27	9,649	−34.2	----	28	9,548	−37.7	----
250	28	10,909	−43.3	----	26	10,626	−49.5	----	26	10,401	−52.0	----	29	10,382	−52.0	----	31	10,923	−42.3	----	20	10,903	−44.3	----	28	10,779	−47.4	----
200	28	12,372	−55.0	----	22	12,053	−57.2	----	26	11,837	−53.4	----	28	11,821	−51.9	----	30	12,391	−54.3	----	5	12,363	−56.4	----	27	12,220	−57.6	----
175	27	13,211	−61.4	----	19	12,897	−59.6	----	23	12,703	−52.5	----	28	12,686	−51.6	----	29	13,232	−61.2	----				----	27	13,053	−62.1	----
150	27	14,152	−67.8	----	17	13,854	−59.3	----	18	13,691	−53.0	----	27	13,682	−51.7	----	25	14,172	−68.5	----				----	27	13,999	−64.8	----
125	21	15,223	−73.1	----	14	14,981	−60.5	----	15	14,848	−53.7	----	25	14,860	−52.9	----	10	15,250	−74.7	----				----	26	15,109	−67.4	----
100	14	16,523	−76.0	----	10	16,365	−61.4	----	11	16,243	−55.2	----	20	16,281	−54.4	----				----				----	23	16,448	−69.7	----
80	9	17,801	−75.0	----	7	17,732	−62.3	----	5	17,668	−54.9	----	14	17,662	−56.1	----				----				----	18	17,777	−70.0	----
60				----	5	19,538	−60.6	----				----	9	19,469	−55.7	----				----				----	6	19,544	−64.8	----
50				----				----				----	6	20,622	−55.5	----				----				----				----

See footnotes at end of table.

TABLE 1.—*Mean dynamic height (geopotential) in units of 0.98 dynamic meters, temperature in degrees centigrade, and relative humidity in percent, for standard pressures, as obtained by radiosondes during May 1948*—Continued

Standard pressure surface (mb.)	Tatoosh Island, Wash. (1,011.3 mb.)				Toledo, Ohio (990.9 mb.)				Washington, D. C. (1,011.0 mb.)			
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity
Surface	31	31	10.2	85	31	191	12.7	72	31	25	16.8	74
1,000	31	124	9.8	82	31	113	(*)	----	31	118	17.0	70
950	31	552	7.9	76	31	550	12.2	66	31	557	15.1	64
900	31	994	5.8	74	31	997	9.7	65	31	1,011	12.9	64
850	31	1,460	3.1	74	31	1,469	6.7	70	31	1,490	10.1	64
800	31	1,949	.8	66	31	1,965	3.9	67	31	1,992	7.1	66
750	31	2,469	−2.3	65	31	2,496	1.7	60	31	2,524	4.3	62
700	31	3,010	−5.3	60	31	3,041	−.9	56	31	3,079	1.1	63
650	31	3,594	−8.8	57	31	3,637	−4.0	55	31	3,674	−2.4	56
600	31	4,205	−12.4	55	31	4,257	−7.4	50	31	4,303	−6.0	50
550	30	4,869	−16.4	56	31	4,935	−11.3	42	29	4,980	−10.1	43
500	30	5,577	−20.9	----	31	5,655	−16.1	----	28	5,708	−15.0	39
450	30	6,354	−26.2	----	31	6,449	−21.8	----	28	6,500	−20.7	----
400	30	7,191	−31.8	----	31	7,297	−28.4	----	28	7,357	−27.2	----
350	29	8,118	−38.7	----	29	8,237	−35.8	----	28	8,305	−34.4	----
300	29	9,161	−45.4	----	27	9,289	−43.4	----	28	9,365	−41.9	----
250	29	10,362	−50.3	----	27	10,492	−51.9	----	27	10,588	−50.7	----
200	28	11,805	−51.4	----	25	11,917	−57.6	----	25	12,007	−58.3	----
175	27	12,672	−50.2	----	24	12,759	−57.7	----	24	12,836	−60.3	----
150	27	13,676	−50.6	----	23	13,733	−58.0	----	21	13,797	−60.2	----
125	26	14,865	−51.8	----	20	14,870	−58.6	----	18	14,923	−59.2	----
100	20	16,326	−53.2	----	16	16,269	−59.5	----	16	16,305	−59.2	----
80	14	17,761	−54.2	----	12	17,664	−59.4	----	9	17,693	−58.0	----
60	5	19,700	−55.0	----	7	19,473	−59.8	----	5	19,513	−56.6	----

[1] Data not yet received.

(*) Temperature and relative humidity data for this level are not available or are available only for certain days. See note entitled "Change in Summarization of Radiosonde Data," p. 6, in the January 1946 issue of the MONTHLY WEATHER REVIEW.

NOTE.—All observations scheduled between 0300 and 0500, G. C. T., except at Ciudad Victoria, Mazatlan, and Merida, where they are taken near 0200, G. C. T. "Number of observations" refers to those of dynamic height only. (In a few cases temperature or humidity data may be missing for one or more standard pressure surfaces of some observations.) Relative humidity data are not published for standard pressure surfaces having a corresponding mean temperature below −20° C.

All relative humidity observations are obtained by electric hygrometer and have been adjusted to compensate for the values occurring below the operating range of the humidity element. For explanation of the adjustment, see article entitled "Curve Method for Obtaining Monthly Means of Relative Humidity," p. 241, MONTHLY WEATHER REVIEW, December 1944.

None of the means included in these tables are based on less than 15 observations at the surface or 5 observations at a standard pressure level.

TABLE 2.—*Free-air resultant winds based on pilot balloon observations made near 2200 G. C. T. during May 1948. Directions given in degrees from north (N=360°, E=90°, S=180°, W=270°). Speeds in meters per second*

Altitude (meters) m. s. l.	Abilene, Tex. (534 m.)			Albuquerque, N. Mex. (1,627 m.)			Atlanta, Ga. (299 m.)			Billings, Mont. (1,095 m.)			Bismarck, N. Dak. (512 m.)			Boise, Idaho (868 m.)			Brownsville, Tex. (7 m.)			Buffalo, N. Y. (220 m.)			Burlington, Vt. (100 m.)			Charleston, S. C. (16 m.)			Cincinnati, Ohio (273 m.)			Denver, Colo. (1,618 m.)			El Paso, Tex. (1,198 m.)		
	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed
Surface	30	162	1.8	31	199	3.4	31	284	2.0	31	6	1.9	31	139	1.6	31	306	1.7	31	120	5.4	28	327	2.7	28	283	0.6	31	168	2.4	29	284	1.8	31	106	0.5	31	217	3.4
500	----	----	----	----	----	----	31	297	2.9	----	----	----	----	----	----	----	----	----	31	127	5.8	28	314	3.2	28	231	.9	31	195	3.6	29	281	2.5	----	----	----	----	----	----
1,000	30	158	2.2	----	----	----	31	281	3.7	----	----	----	31	153	1.5	31	304	1.8	26	142	4.5	24	287	3.2	27	267	2.1	30	234	4.0	28	282	2.8	----	----	----	----	----	----
1,500	27	177	3.0	----	----	----	31	273	4.9	31	31	1.2	31	168	1.3	31	270	.5	24	139	1.9	17	268	3.4	24	264	3.6	28	266	6.2	27	275	3.8	----	----	----	31	218	4.1
2,000	26	193	3.6	31	211	4.0	30	281	5.4	31	30	1.6	29	214	1.5	30	188	1.4	24	136	2.3	14	262	4.0	19	277	4.6	28	272	7.2	22	292	3.8	31	129	1.8	31	218	4.2
2,500	26	204	3.6	31	208	5.3	27	285	6.3	28	135	.8	25	253	3.5	30	189	2.5	20	154	1.4	12	273	5.1	16	290	5.8	28	273	8.1	19	303	5.8	29	169	2.5	31	217	4.1
3,000	25	225	4.3	31	216	5.4	26	282	6.6	25	215	2.8	22	271	3.2	29	195	4.7	20	150	.4	----	----	----	12	281	5.7	23	276	9.8	17	304	6.2	28	203	3.2	31	218	4.9
4,000	24	257	7.7	28	231	8.2	23	298	9.6	23	216	4.1	20	239	3.7	25	211	7.2	16	315	.4	----	----	----	11	281	7.1	21	268	12.1	12	306	9.1	24	239	6.6	30	231	7.1
5,000	23	263	9.0	26	249	9.0	21	293	10.6	19	224	6.4	15	303	7.1	20	223	10.3	14	296	3.6	----	----	----	----	----	----	19	275	13.4	----	----	----	22	257	9.1	29	244	9.6
6,000	22	262	9.1	24	250	11.2	20	294	11.5	14	202	7.8	14	302	9.0	15	232	11.5	14	300	5.2	----	----	----	----	----	----	15	281	12.6	----	----	----	17	270	12.6	29	248	10.5
8,000	20	273	12.0	20	259	14.8	14	289	10.0	12	224	10.3	10	269	7.1	----	----	----	----	----	----	----	----	----	----	----	----	11	288	12.3	----	----	----	12	274	14.6	23	265	10.5
10,000	10	279	8.0	18	262	18.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	19	270	15.1
12,000	----	----	----	15	267	18.7	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	16	272	18.8

Altitude (meters) m. s. l.	Ely, Nev. (1,910 m.)			Grand Junction, Colo. (1,475 m.)			Greensboro, N. C. (271 m.)			Havre, Mont. (767 m.)			Jacksonville, Fla. (16 m.)			Joliet, Ill. (178 m.)			Las Vegas, Nev. (575 m.)			Little Rock, Ark. (88 m.)			Medford, Oreg. (416 m.)			Miami, Fla. (12 m.)			Mobile, Ala. (66 m.)			Nashville, Tenn. (194 m.)			New York N. Y. (15 m.)		
	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed
Surface	31	187	5.0	31	248	3.7	31	280	1.2	28	112	1.8	30	108	1.6	28	4	2.3	31	206	3.3	31	53	0.9	30	302	1.5	30	128	4.3	30	294	0.4	31	305	1.8	26	222	1.6
500	----	----	----	----	----	----	31	264	2.0	----	----	----	30	242	.8	28	348	2.4	----	----	----	31	25	.7	30	298	1.7	30	127	5.2	30	252	1.6	31	288	2.5	26	240	2.8
1,000	----	----	----	----	----	----	31	251	3.0	28	110	2.3	28	256	4.1	24	324	3.3	31	201	4.6	28	287	.4	30	292	1.8	30	119	2.6	28	270	2.3	31	279	3.6	24	274	5.1
1,500	----	----	----	31	248	3.7	30	251	4.1	28	126	1.7	28	257	6.0	21	308	5.7	31	199	4.5	26	298	2.0	29	245	3.1	30	96	.6	27	288	2.8	28	281	3.2	24	276	6.0
2,000	31	191	5.3	31	240	4.3	27	268	6.1	28	257	2.8	28	262	6.8	20	301	6.4	31	202	4.3	23	297	3.7	25	211	3.7	29	315	1.0	27	290	3.4	26	301	3.4	23	277	7.7
2,500	31	201	5.7	31	234	4.7	25	283	8.1	27	182	2.8	26	258	8.0	17	306	6.8	31	212	4.5	21	292	4.6	20	217	4.5	26	293	1.0	24	296	3.5	24	309	5.0	21	285	8.8
3,000	31	199	5.1	31	232	5.7	22	296	10.2	21	205	3.5	25	269	8.7	15	309	7.8	31	224	5.2	18	293	4.8	16	224	4.9	24	293	.1	21	304	3.9	23	304	5.9	13	283	7.8
4,000	26	211	6.6	30	236	6.5	20	290	11.5	18	199	5.2	21	283	8.0	12	314	10.5	31	228	8.0	16	305	7.8	11	238	8.1	22	278	2.1	19	313	4.8	21	300	7.0	----	----	----
5,000	23	227	9.4	29	244	8.0	17	292	13.6	11	201	7.2	18	293	7.7	----	----	----	30	229	10.5	15	297	9.8	10	252	9.1	20	257	3.1	16	309	4.8	18	298	10.5	----	----	----
6,000	20	234	13.2	28	248	11.2	13	281	13.9	----	----	----	15	293	8.0	----	----	----	28	239	10.7	11	304	12.5	----	----	----	18	262	5.1	13	303	6.1	14	333	8.1	----	----	----
8,000	14	236	17.6	15	265	15.7	----	----	----	----	----	----	12	272	8.2	----	----	----	20	258	14.1	----	----	----	----	----	----	11	264	7.9	----	----	----	----	----	----	----	----	----
10,000	----	----	----	11	270	16.1	----	----	----	----	----	----	----	----	----	----	----	----	15	270	16.9	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

TABLE 2.—*Free-air resultant winds based on pilot balloon observations made near 2200 G. C. T. during May 1948. Directions given in degrees from north (N=360°, E=90°, S=180°, W=270°). Speeds in meters per second*—Continued

Altitude (meters) m. s. l.	Oakland, Calif. (8 m.)			Oklahoma City, Okla. (396 m.)			Omaha, Nebr. (306 m.)			Phoenix, Ariz. (338 m.)			Rapid City, S. Dak. (982 m.)			St. Louis, Mo. (181 m.)			St. Cloud, Minn. (318 m.)			San Antonio, Tex. (240 m.)			San Diego, Calif. (13 m.)			Sault Ste. Marie, Mich. (225 m.)			Seattle, Wash. (116 m.)			Spokane, Wash. (725 m.)			Washington, D. C. (24 m.)		
	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed
Surface	31	261	6.0	29	154	1.6	30	83	1.3	31	267	2.0	27	134	1.9	30	334	1.5	31	334	1.0	31	126	2.8	31	260	4.2	29	304	6.1	30	218	1.6	27	222	1.5	29	226	0.9
500	31	272	5.1	29	149	2.2	30	97	1.6	31	255	2.5	---	---	---	30	338	1.6	31	345	1.5	31	133	2.6	31	274	3.7	29	307	7.2	30	234	2.3	---	---	---	29	267	2.9
1,000	30	280	3.6	28	164	3.0	30	163	1.3	31	231	3.0	27	134	1.8	27	295	1.4	31	337	1.9	30	142	2.8	27	288	2.9	29	313	6.8	28	216	3.2	27	220	2.3	27	263	4.5
1,500	26	280	3.5	26	182	3.8	29	211	2.1	31	210	3.6	27	146	1.4	25	304	1.9	30	324	1.9	28	148	1.9	23	298	3.1	27	322	4.3	26	232	2.2	24	208	2.0	25	262	6.6
2,000	24	278	3.2	24	224	3.3	26	246	3.3	31	203	5.0	26	190	1.6	22	301	3.4	27	319	3.3	26	153	.9	21	276	3.3	26	322	5.0	19	201	2.8	22	184	2.7	20	283	8.8
2,500	24	278	4.2	22	258	4.8	24	270	4.3	31	205	6.5	24	223	3.5	20	299	4.2	21	312	5.0	24	268	1.4	20	268	3.1	24	322	5.5	16	216	2.7	22	186	3.6	19	285	10.8
3,000	23	274	5.2	21	264	6.9	24	288	5.3	31	210	7.3	20	256	5.4	19	299	5.9	20	312	6.8	22	279	3.4	20	256	4.1	23	321	6.5	13	228	5.4	15	196	4.8	16	291	12.8
4,000	22	276	7.9	19	266	10.5	21	302	7.7	30	220	7.7	14	263	8.3	18	309	7.9	17	307	9.2	20	286	5.2	20	253	6.1	21	307	7.6	---	---	---	11	184	6.0	13	289	13.6
5,000	22	273	11.9	15	283	10.1	18	286	9.8	28	240	7.5	14	276	10.0	13	315	9.8	16	312	10.8	13	276	6.3	16	267	7.7	17	302	10.7	---	---	---	10	198	9.8	---	---	---
6,000	21	274	14.2	11	296	13.5	16	290	10.4	24	255	11.2	11	278	9.4	11	311	12.2	14	305	12.4	---	---	---	14	269	8.9	16	298	15.0	---	---	---	---	---	---	---	---	---
8,000	15	277	18.6	---	---	---	12	305	12.5	16	266	14.3	11	278	13.3	---	---	---	10	305	18.4	---	---	---	10	267	12.1	---	---	---	---	---	---	---	---	---	---	---	---
10,000	---	---	---	---	---	---	10	290	19.6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12,000	---	---	---	---	---	---	10	298	16.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

TABLE 3.—*Free-air resultant winds based on rawin observations made near 0300 G. C. T., during May 1948. Directions given in degrees from north (N=360°, E=90°, S=180°, W=270°). Speeds in meters per second*

Altitude (meters) m. s. l.	Albuquerque, N. Mex. (1,636 m.)			Big Spring, Tex. (774 m.)			Bismarck, N. Dak. (505 m.)			Brownsville, Tex. (7 m.)			Caribou, Maine (191 m.)			Charleston, S. C. (13 n.)			Columbia, Mo. (237 m.)			Grand Junction, Colo. (1,473 m.)			Greensboro, N. C. (275 m.)			Hatteras, N. C. (3 m.)			International Falls, Minn. (360 m.)			Little Rock, Ark. (80 m.)			Miami, Fla. (12 m.)		
	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed
Surface	31	140	1.9	31	130	3.2	31	102	2.4	31	124	4.1	31	166	0.9	31	265	1.4	31	78	0.7	31	251	0.6	31	260	0.4	30	204	2.9	31	81	0.5	31	85	0.8	31	124	1.5
500	---	---	---	---	---	---	---	---	---	31	136	8.4	29	193	3.6	30	215	5.1	31	120	.9	---	---	---	31	230	2.2	30	226	4.7	31	65	.8	31	114	1.7	31	138	3.9
1,000	---	---	---	31	150	5.3	30	119	3.4	31	141	6.9	29	195	4.3	30	244	5.4	30	171	1.0	---	---	---	31	256	4.2	29	242	4.3	30	11	1.5	31	179	1.9	31	106	2.7
1,500	---	---	---	31	157	5.5	29	144	2.9	31	145	4.9	28	208	3.9	30	262	6.0	30	272	2.7	31	239	.6	31	273	5.6	29	255	4.9	30	356	2.0	31	225	2.8	31	59	1.9
2,000	31	223	2.6	31	184	3.8	29	188	2.0	31	145	3.2	28	210	4.2	30	267	6.6	30	282	4.3	31	235	2.6	31	280	6.4	29	259	5.1	30	336	3.6	31	248	3.1	31	39	1.6
2,500	31	240	4.6	31	227	3.6	28	228	2.1	31	138	2.0	28	213	3.9	30	281	6.8	30	284	6.0	31	227	4.2	31	281	7.4	30	268	7.0	30	336	4.9	31	262	4.8	31	30	1.5
3,000	31	241	6.1	31	252	4.4	28	263	2.9	31	135	.4	27	237	4.4	30	274	6.6	30	288	7.2	31	221	5.4	31	283	8.1	30	269	8.0	30	328	6.5	30	273	6.0	31	34	.5
4,000	31	245	7.7	31	273	6.3	29	290	4.7	31	298	2.2	28	252	7.2	29	278	7.4	30	291	8.2	31	223	6.6	31	279	10.1	26	268	9.4	30	332	7.8	30	278	8.6	31	282	1.7
5,000	30	252	9.4	31	266	8.9	29	287	6.4	31	310	4.8	29	247	8.0	29	281	9.0	29	294	10.2	31	234	8.9	30	287	11.1	23	268	10.2	29	327	10.3	28	287	9.9	31	276	4.0
6,000	29	257	10.8	31	268	10.3	29	287	6.9	31	299	6.0	27	243	9.7	28	283	10.0	30	290	12.9	31	245	10.7	29	282	12.9	23	270	11.3	28	321	10.5	27	274	10.2	31	275	6.9
8,000	28	262	14.7	29	273	12.5	29	283	11.1	31	287	12.6	21	256	10.7	27	268	10.6	29	279	17.8	30	251	14.7	26	282	14.3	16	275	12.6	24	303	14.1	27	271	10.6	30	266	12.4
10,000	21	266	11.3	26	275	13.4	27	280	13.0	29	275	18.1	19	257	14.1	24	263	10.2	26	276	19.5	26	262	14.2	23	273	16.9	---	---	---	19	283	14.9	24	277	11.0	29	264	17.2
12,000	16	265	12.4	24	260	16.3	26	284	14.5	23	269	22.0	17	260	12.4	21	246	11.4	20	284	17.8	18	258	15.1	18	272	18.0	---	---	---	16	280	13.8	21	260	12.4	28	267	23.0
14,000	14	259	15.2	19	273	19.8	23	286	10.7	10	276	22.4	12	263	11.6	15	272	15.0	13	296	22.0	12	266	14.3	---	---	---	---	---	---	16	290	10.7	18	269	13.6	20	274	26.7
16,000	11	270	16.5	---	---	---	20	296	5.9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	12	305	6.3	15	281	11.8	---	---	---
18,000	---	---	---	---	---	---	11	348	5.7	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

	Nantucket, Mass. (14 m.)			Nashville, Tenn. (177 m.)			New Orleans, La. (6 m.)			Oakland, Calif. (31 m.)			Oklahoma City, Okla. (392 m.)			Rapid City, S. Dak. (980 m.)			San Antonio, Tex. (242 m.)			San Juan, P. R. (28 m.)			St. Cloud, Minn. (318 m.)			Santa Maria, Calif. (72 m.)			Sault Ste. Marie, Mich. (224 m.)			Spokane, Wash. (601 m.)			Tatoosh Island, Wash. (33 m.)		
Surface	29	173	0.8	31	202	0.7	31	191	1.6	31	282	5.2	30	127	2.8	31	108	2.3	31	123	4.9	31	104	4.4	31	38	1.0	31	273	4.8	31	310	2.8	31	202	1.1	31	201	3.4
500	28	244	3.1	31	55	1.2	31	216	2.6	31	285	5.6	29	127	3.2	---	---	---	31	120	6.2	31	102	7.1	30	28	1.9	31	324	5.5	31	343	5.4	---	---	---	31	204	3.6
1,000	27	262	4.2	31	281	2.1	31	243	1.3	31	287	5.3	28	166	3.2	30	114	2.0	31	133	4.8	31	113	6.6	30	35	1.7	31	338	6.2	31	338	4.8	31	222	1.6	31	197	4.2
1,500	27	262	5.0	31	264	3.5	31	297	1.0	31	284	4.4	28	206	2.4	30	156	3.3	31	169	2.6	31	113	5.2	30	3	2.3	31	350	4.9	31	333	4.6	31	218	1.6	30	185	3.3
2,000	28	250	6.9	31	290	4.5	31	250	1.3	31	283	4.0	28	251	2.9	30	192	2.9	31	225	2.5	31	112	4.2	30	335	2.8	31	341	4.2	31	326	5.3	31	188	2.1	30	187	4.0
2,500	27	256	8.7	31	291	5.8	31	241	1.1	31	285	3.6	28	270	3.7	30	220	3.1	31	249	3.0	31	110	3.4	30	316	4.2	31	315	4.5	30	323	6.5	30	178	2.3	30	189	5.0
3,000	26	254	10.0	30	293	8.0	31	265	1.9	31	285	4.8	28	283	5.0	30	251	3.8	31	264	4.1	31	114	3.2	31	304	6.8	31	296	6.0	30	318	7.8	30	191	3.1	29	194	6.3
4,000	26	253	11.6	29	289	9.3	31	281	5.1	31	282	8.1	30	271	7.0	31	266	6.4	31	280	6.1	31	164	1.9	31	301	8.6	30	284	9.2	29	304	8.2	29	214	5.2	27	198	4.0
5,000	25	253	12.1	29	292	12.1	31	284	6.9	31	276	10.8	30	271	8.5	30	261	8.8	31	282	7.7	31	234	2.2	31	301	10.8	28	279	12.3	28	298	10.2	26	210	8.3	27	199	3.1
6,000	22	256	14.8	27	289	13.2	31	293	8.4	31	283	13.8	30	273	11.0	28	260	8.1	31	279	8.4	30	250	5.8	31	295	12.1	27	279	15.3	28	290	13.4	23	207	6.3	27	210	3.5
8,000	19	257	18.2	23	283	12.0	30	286	10.3	27	282	17.3	26	272	13.8	27	263	11.2	28	277	10.3	30	263	10.4	27	290	14.4	24	265	17.8	23	286	12.6	21	214	7.0	25	203	4.1
10,000	12	259	20.7	18	282	12.4	30	282	15.6	19	284	21.5	22	273	15.1	27	269	15.4	25	276	14.7	30	276	15.4	20	281	15.7	13	277	17.2	19	270	16.3	17	153	9.2	22	262	4.3
12,000	---	---	---	16	279	14.9	29	277	20.3	---	---	---	---	---	---	27	259	14.8	21	276	18.8	29	278	22.1	13	277	14.0	---	---	---	16	280	17.2	---	---	---	18	180	4.1
14,000	---	---	---	---	---	---	24	284	20.4	---	---	---	---	---	---	23	265	9.8	16	272	19.8	28	283	25.7	---	---	---	---	---	---	10	282	13.6	---	---	---	18	204	5.7
16,000	---	---	---	---	---	---	16	289	14.6	---	---	---	---	---	---	16	260	7.4	---	---	---	18	284	14.3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

DELAYED REPORT FOR APRIL, 1948

TABLE 4.—*Free-air resultant winds based on rawin observations made near 0300 G. C. T., during April 1948. Directions given in degrees from north (N=360°, E=90°, S=180°, W=270°). Speeds in meters per second*

Altitude (meters) m. s. l.	San Juan, Puerto Rico (28 m.)			Altitude (meters) m. s. l.	San Juan, Puerto Rico (28 m.)			Altitude (meters) m. s. l.	San Juan, Puerto Rico (28 m.)		
	Observations	Direction	Speed		Observations	Direction	Speed		Observations	Direction	Speed
Surface	30	89	4.6	2,500	30	47	3.5	8,000	29	272	12.7
500	30	82	6.6	3,000	30	45	1.7	10,000	29	270	23.2
1,000	30	81	6.5	4,000	30	325	2.4	12,000	29	264	29.1
1,500	30	69	5.3	5,000	29	289	4.2	14,000	24	262	28.0
2,000	30	57	4.5	6,000	30	279	7.0				

RIVER STAGES AND FLOODS FOR MAY 1948

ELMER R. NELSON

River stages during May were mostly above normal in the Coastal States along the Atlantic, the Pacific and the East Gulf of Mexico drainage areas. Stages were also above normal in the Ohio Valley, the upper Mississippi and eastern North Dakota. The greatest negative departures from normal of the stations tabulated were at Demopolis, Ala., and Vicksburg, Miss., where the stages averaged 7.3 and 6.3 feet below normal, respectively.

Most severe flooding during the month developed in the Pacific Northwest during the last half of the month. Flooding continued severe into the last decade of June The flood on the Columbia and tributaries was the most devastating of record although the stages generally were lower than the great flood of 1894. The Kootenai River in northern Idaho exceeded the flood of 1894 at Bonners Ferry. Severe flooding occurred on the Sheyenne River in eastern North Dakota, and major flooding occurred on the Rio Grande River in northern New Mexico.

At Fairbanks, Alaska, the worst flood in 11 years was experienced. The Chena River rose 13 feet 4½ inches from the time the ice moved on May 10 until it reached its crest on the morning of May 22. One-fifth of the total area of Fairbanks was flooded. Residents were forced to evacuate their homes in the lowest part of the city which was covered with water up to 10 feet. This flood resulted from unusual weather which prevailed over the interior of Alaska during April. At Fairbanks the snowfall for April measured 25.1 inches or a water equivalent of 2.30 inches. This was the greatest amount that had ever been measured in April during the 43 years of record. There was practically no thawing weather during April. Above normal temperatures during the early part of May caused rapid melting of the snow cover over the Chena watershed.

Hudson Bay drainage.—Severe flooding occurred on the Sheyenne River, a tributary of the Red River of the North, during the last half of April and the first half of May. The flood was due to snow melt from the vicinity of, and north of Sheyenne, N. Dak. The river overflowed highways at Sheyenne on April 19, crested at Valley City, N. Dak., on April 27 and approached within a foot of the record stage of 1943 at West Fargo on May 10.

In Valley City, 35 families were evacuated because of high water. Some flooding of farm lands resulted between Horace, N. Dak., and West Fargo in areas where banks are low. In Cass County the flooding of 10,000 acres caused a loss to crops of about one-third of this acreage.

St. Lawrence drainage.—Light to moderate flooding occurred in the Lake Michigan drainage area in the upper Grand and Saginaw River Basins between the 10th and 15th. Rapid rises resulted when heavy rains fell during the afternoon and night of May 9 on ground that was thoroughly saturated from the heavy rains of March and April. The rains over the upper Grand Basin averaged nearly 2½ inches and over the Saginaw Basin about 1 inch. The flooding was the most severe in the Lansing, Mich., area near the confluence of the Grand and Red Cedar Rivers. The Red Cedar crested one-half foot below the March flood at Williamston, Mich., and 0.1 foot below, at East Lansing, Mich. At Lansing, Mich., on the Grand River, the crest was 1.6 feet below the one in March. Three major floods and one minor flood have occurred in this area in 14 months. The Grand River did not overflow below Lansing but approached within one-half foot of bankfull stage at Ionia and Lowell, Mich., and within 2 and 3 feet at Grand Rapids and Portland, Mich., respectively. Property loss due to flood waters was negligible at Owosso and Williamston, Mich. At other points, the damages were principally to growing crops and secondary roads.

Atlantic Slope drainage.—About 7.74 inches of rain fell during the month in the vicinity of Portland, Maine, the greatest on record for May. Nearly all the rivers and streams in Maine were brought to near bankfull stage following the heavy rain on the 17th and 18th. Minor flooding took place along the immediate vicinity of river banks from the 18th to the 24th with practically no damage. Storage reservoirs which were only one-half full at the beginning of the month were almost to capacity by the 31st.

River stages in New Hampshire remained moderately high throughout the month. Precipitation averaged nearly twice normal with some measureable rain occurring on 18 to 20 days.

Heavy rains caused some overflow in Perkiomen Creek in Pennsylvania on the 13th with a crest of 10.2 feet at Fairmount Dam at Philadelphia. No damage resulted other than the temporary closing of one or two sections of the highways.

There were flash floods in the Chickahominy River tributaries in New Kent and Charles City Counties, Va., on the 26th. Major damage resulted to the Chesapeake and Ohio railroad track and U. S. Highway No. 60, east of Windsor Shades, Va. One hundred twenty feet of track fill were washed out, leaving the rails suspended about 40 feet in the air. There was some damage to crops and secondary roads in the swampy area north of Highway No. 60.

An important rise occurred in tidewater in the lower Potomac at Washington, D. C., on May 7 as a result of prolonged strong southeasterly winds. The highest stage reached was 5.8 feet during high tide at 6:48 a. m. This was 2.5 feet above normal and the highest tidal stage resulting from wind effects since September 18, 1945. Some light overflows occurred in low places with no damage. A slight overflow occurred on the Roanoke River at Alta Vista, Va., on the 14th as a result of locally heavy rains. No damage resulted.

Upper Mississippi Basin.—Light to moderate flooding occurred in the extreme upper Mississippi River at Aitkin and Fort Ripley, Minn., during April and May. This overflow was due to rapid snow melt and moderate to heavy rain.

The snowfall over northern Minnesota during the winter season (November–March) was approximately 50 percent above normal. The snow cover, which was affected very little by occasional thaws or evaporation during the season, began melting during the closing days of March. On April 8th flood stage was reached at Aitkin, Minn. Flooding was prolonged until May 18 by heavy rains on April 19–20 and April 22–27.

Secondary roads and approximately 15,000 acres of farm lands in Aitkin County were inundated for several weeks. Eighty families were evacuated and livestock and tangible property moved. The greatest loss from the high water was to prospective crops.

Arkansas Basin.—Minor flooding occurred on the Neosho River in the vicinity of Emporia, Kans., and on the Poteau near Poteau, Okla., during the first half of May. A second substantial rise occurred on the Neosho River below LeRoy, Kans., near the middle of the month but bankfull stages were not reached.

The overflow in the Neosho River was due to heavy afternoon and evening showers on May 1. (Council Grove, Okla., reported 2.14 inches.) The flooding on the Poteau was due to an average rainfall of 3 inches on May 10–11.

The only damages resulting from these overflows were along the Neosho River. Approximately 10,000 acres of farm land were inundated and considerable damage resulted to recently planted corn. Some damage was done to highways and bridges.

Red Basin.—Heavy thundershowers which averaged 4.36 inches over the Sulphur River Basin on the 10th and 11th resulted in a stage of 7.4 feet above flood stage at Naples, Tex., on the 15th. The heaviest rainfall reported was 6.33 inches. Moderate rains on the 16th–17th and 24th–25th prolonged the high water.

Rains of 2½ to 6 inches over the Cypress Basin on the 10th and 11th resulted in flood waters of nearly 5 feet above bankfull at Jefferson, Tex., on the 17th. The rainfall over the Little River Basin during the same period averaged 4.02 inches and resulted in minor flooding at Horatio and Whitecliffs, Ark.

Lower Mississippi Basin.—The Tallahatchie and Yazoo Rivers continued to fall slowly during the month from the peak crests reached in February and March. The Tallahatchie fell below flood stage at Swan Lake, Miss., on the 1st and the Yazoo at Yazoo City, Miss., on the 17th.

Light flooding occurred on the St. Francis River at Fisk, Mo., on the 19th and 20th following the light to heavy rain over the basin on the 16th. The heaviest amount reported was 3.30 inches at Fredericktown, Tenn.

West Gulf of Mexico drainage.—Moderate rains on the 4th and 6th and heavy rains on the 11th and 12th over the Sabine Basin resulted in moderate flooding at Mineola, Tex., and Gladewater, Tex. Considerable damage occurred in the oilfields near Gladewater.

Light to moderate flooding occurred on the Trinity River in Texas from the 11th to the 30th and on the East Fork from the 12th to the 15th as a result of the heavy rains over the upper Trinity River Basin on the 10th and 11th. No damage was reported.

A major flood occurred on the Rio Grande in New Mexico as a result of snow melt and heavy rainfall near the crest dates. The highest stages since 1941 were reached at Albuquerque and Embudo, N. Mex., and the highest since 1942 at Otowi Bridge, San Acacia, and San Marcial, N. Mex.

Columbia Basin.—During the latter part of May and continuing into June, flood stages occurred in the Columbia River Basin, which, within the period of record. were exceeded only by the great flood of 1894; at Bonners Ferry, Idaho, the stage of the Kootenai River exceeded that flood. A critical feature of the flood, in addition to the extremely high stages, was the long duration of the flood stages at Portland, Oreg.; flood stage was exceeded on May 22 and the river was still above the flood level on June 30. In addition the Portland stage remained above the 29-foot stage for about 15 days.

The flood may be attributed to the combination of the following factors: (1) An abnormally high accumulation of snow in the basin. (2) Low temperatures in the early spring followed by an abrupt change to excessively high temperatures over the entire basin in the late spring. (3) Heavy rains coincident with the high temperatures.

Precipitation over the basin from October 1947 through April 1948, averaged well above normal except over the upper portion of the Snake River Basin in southern Idaho. The central portion of the Columbia Basin, in northern Idaho and adjoining portions of eastern Washington and western Montana, had as much as 150 percent of the normal precipitation for that period. The possibilities of a major flood in the upper Columbia became evident from the winter accumulation of precipitation as early as March 1, as indicated in the issue of the Water Supply Forecast bulletin on that date. The increase in the flood hazard, extending along the entire main stem of the Columbia, was noted in subsequent issues of the bulletin on April 1 and May 1. With the exception of one week in April, temperatures were below normal from March until about May 15, retarding normal melting during April and early May. Above normal precipitation in the first half of May also accentuated the accumulation of snow on the ground.

By mid-May, a low pressure system over northern California and a high pressure ridge to the east induced a flow of warm moist air over the basin. The high temperatures were general over the entire basin and extended to high elevations, leading to nearly simultaneous melting from all portions of the area. These high temperatures prevailed during the last half of May and the first of June.

Heavy rains with considerable thunderstorm activity also prevailed during this period. For the entire month of May, precipitation amounts were generally excessive with as much as 450 percent of normal over the main Columbia above the Snake River, and over 200 percent of normal in much of the basin except in the Snake River basin. The precipitation was excessive in both halves of May, being mainly in form of snow in the first half.

Heavy rains continued well into June. For the first 3 weeks of June, precipitation exceeded 500 percent of normal in eastern Washington and well above normal in much of the remainder of the basin.

Provisional data indicate that the Columbia River at Portland reached a first crest of over 29.9 feet on June 1 and remained above 29 feet until June 16, with a high stage of near 30 feet on June 13–14, compared to a stage of about 33 feet in 1894. The Kootenai River at Bonners Ferry, Idaho, crested at 35.3 feet on May 29, exceeding the 34 foot stage established there in 1894. The greatest single disaster of this flood was the inundation of Vanport, Oreg., due to a break in the levee. In addition to the loss of life at Vanport, many lives were lost in other parts of the basin. On the basis of lives lost and property damage, this flood doubtless is the most disastrous in the history of the basin. A more complete report of this flood will be given in a later issue of the Review.

FLOOD STAGE REPORT FOR MAY 1948

[All dates in May unless otherwise specified]

River and station	Flood stage	Above flood stages—dates		Crest [1]	
		From—	To—	Stage	Date
ST. LAWRENCE DRAINAGE					
Lake Michigan					
Red Cedar:	*Feet*			*Feet*	
Williamston, Mich.	7	10	14	10.2	10
East Lansing, Mich.	8	10	15	11.2	11
Grand: Lansing, Mich.	11	11	14	13.2	12
Lake Huron					
Shiawassee: Owosso, Mich.	7	10	15	8.0	10
ATLANTIC SLOPE DRAINAGE					
Kennebec: Augusta, Maine	13	19	19	15.0	19
Susquehanna:					
Oneonta, N. Y.	12	17	18	12.5	17
Vestal, N. Y.	14	24	24	14.1	24
Roanoke: Alta Vista, Va.	10	14	14	10.5	14
Ocmulgee: Lumber City, Ga.	12	Apr. 1	Apr. 30	18.8	Apr. 3
MISSISSIPPI SYSTEM					
Upper Mississippi Basin					
Pecatonica: Freeport, Ill.	10	11	17	11.9	13
Rock: Moline, Ill.	10	13	22	10.7	15, 17
Mississippi:					
Aitkin, Minn.	12	Apr. 8	18	15.8	Apr. 28
Fort Ripley, Minn.	10	Apr. 26	6	10.7	Apr. 30
Louisiana, Mo.	12	Apr. 1	2	12.2	2
		4	19	12.6	14
Missouri Basin					
James: Huron, S. Dak.	9	Apr. 1	Apr. 6	12.9	Apr. 1
Republican:					
Benkelman, Nebr.	5	23	23	5.1	23
Cambridge, Nebr.	5	24	24	5.5	24
		30	(2)	6.6	30
Ohio Basin					
Scioto: LaRue, Ohio	11	15	15	11.4	15
Wabash:					
Wabash, Ind.	12	8	9	15.3	8
Lafayette, Ind.	11	8	10	14.0	9
		13	16	14.5	14
Covington, Ind.	16	10	10	16.6	10
		14	17	18.1	15
Terre Haute, Ind.	14	14	19	15.2	17
Tennessee: Kentucky Dam, Ky.	31	Mar. 24	Apr. 30	40.7	Apr. 2
				39.2	Apr. 16
				41.3	Apr. 24–25
Ohio:					
Mount Vernon, Ind.	35	Mar. 28	Apr. 30	41.4	Apr. 4
				47.1	Apr. 23
Dam No. 49, Uniontown, Ky.	37	Mar. 29	Apr. 30	43.7	Apr. 5
				49.6	Apr. 24
Shawneetown, Ill.	33	Mar. 26	2	44.1	Apr. 5
				50.4	Apr. 24
Dam No. 50, Fords Ferry, Ky.	34	Mar. 24	2	46.9	Apr. 5
				52.9	Apr. 23–24
Dam No. 52, Brookport, Ill.	37	Mar. 24	1	44.7	Apr. 4
				45.5	Apr. 24
Dam No. 53, near Mound City, Ill.	42	Mar. 23	2	51.6	Apr. 2
				50.2	Apr. 24
Cairo, Ill.	40	Mar. 22	2	51.6	Apr. 3
				47.3	Apr. 16–17
				47.9	Apr. 23–25
Arkansas Basin					
Neosho: Emporia, Kans.	20	2	3	25.5	3
Poteau: Poteau, Okla.	21	12	14	25.6	13
Red Basin					
Little: Whitecliffs, Ark.	25	14	18	26.0	15
Sulphur:					
Hagansport, Tex.	38	11	19	41.0	12
				40.1	18
Naples, Tex.	22	12	30	29.4	15
Cypress: Jefferson, Tex.	18	16	20	22.8	17

FLOOD STAGE REPORT FOR MAY 1948—Con.

River and station	Flood stage	Above flood stages—dates		Crest	
		From—	To—	Stage	Date
MISSISSIPPI SYSTEM—continued					
Lower Mississippi Basin					
	Feet			*Feet*	
St. Francis: Fisk, Mo.	20	19	20	20.6	19
Tallahatchie: Swan Lake, Miss.	26	Mar. 1	1	30.1	Mar. 21
				35.6	Mar. 19–20
Yazoo: Yazoo City, Miss.	29	Mar. 1	17	35.6	Mar. 23
				35.6	Apr. 9
				35.4	Apr. 14
				40.5	Apr. 3–5
Mississippi:				37.3	Apr. 17–18
New Madrid, Mo.	34	Mar. 25	2	37.5	Apr. 24–26
Caruthersville, Mo.	32	Mar. 25	3	39.3	Apr. 4–5
Atchafalaya Basin					
Atchafalaya:					
Melville, La.	37	Apr. 17	Apr. 30	37.3	Apr. 21–22
Atchafalaya, La.	25	Feb. 26	14	26.9	Mar. 13–18
				27.3	Apr. 21–29
WEST GULF OF MEXICO DRAINAGE					
Sabine:					
Mineola, Tex.	14	11	19	18.5	14, 15
Gladewater, Tex.	26	13	26	35.4	18
East Fork: Rockwall, Tex.	10	12	15	17.1	12
Trinity:					
Rosser, Tex.	26	11	14	27.8	12
Trinidad, Tex.	28	12	20	34.0	15
Long Lake, Tex.	40	15	21	44.2	8
Liberty, Tex.	24	22	30	26.1	7
Rio Grande:					
Lobatos Bridge, Colo.	4	19	(2)	7.3	26
Embudo, N. Mex.	8	22	(2)	12.3	27
Espanola, N. Mex.	7	21	(2)	8.7	27
Otowi Bridge, N. Mex.	9	27	28	9.3	27
Albuquerque, N. Mex.	4	25	30	4.8	28
GULF OF CALIFORNIA DRAINAGE					
Colorado Basin					
Gunnison: Delta, Colo.	11	19	24	12.4	20
				12.3	22
Animas: Durango, Colo.	4	5	9	4.9	7
		15	(2)	7.2	20
PACIFIC SLOPE DRAINAGE					
Columbia Basin					
Kootenai:					
Libby, Mont.	18	25	(2)	19.6	28
Bonners Ferry, Idaho	31	23	(2)	35.3	29
Flathead:					
Columbia Falls, Mont.	13.2	19	(2)	19.5	23
Somers, Mont.	93	26	(2)	------	------
Polson, Mont.	15.6	25	(2)	------	------
Clark Fork: St. Regis, Mont.	17	21	(2)	20.6	24
St. Joe:					
Calder, Idaho	87	18	(2)	89.0	28
St. Maries, Idaho	35	19	(2)	39.2	30
Coeur d'Alene:					
Cataldo, Idaho	40	8	(2)	42.6	25, 26
Coeur d'Alene Lake, Idaho	30	1	(2)	36.0	30
Spokane: Spokane, Wash.	27	23	(2)	28.3	30, 31
Willamette: Portland, Oreg.	18	22	(2)	------	------
Clearwater: Kamiah, Idaho	14	20	(2)	21.2	29
Snake: Lewiston, Idaho	22	29	29	22.8	29
Columbia:					
Boundary, Wash.	32	27	(2)	------	------
Umatilla, Oreg.	25	27	(2)	30.5	30–31
The Dalles, Oreg.	51	22	(2)	------	------
Vancouver, Wash.	15	19	(2)	------	------

[1] Provisional.

[2] Continued at end of month.

CLIMATOLOGICAL DATA FOR MAY 1948

CONDENSED CLIMATOLOGICAL SUMMARY OF TEMPERATURE AND PRECIPITATION, BY SECTIONS

[For description of tables and charts, see REVIEW, January 1943, p. 15]

In the following table are given for the various sections of the climatological service of the Weather Bureau the monthly average temperature and total rainfall; the stations reporting the highest and lowest temperatures, with dates of occurrence; the stations reporting the greatest and least total precipitation; and other data as indicated by the several headings.

The mean temperature for each section, the highest and lowest temperatures, the average precipitation, and the greatest and least monthly amounts are found by using all trustworthy records available.

The mean departures from normal temperatures and precipitation are based only on records from stations that have 10 or more years of observations. Of course, the number of such records is smaller than the total number of stations.

Section	Temperature								Precipitation					
	Section average	Departure from the normal	Monthly extremes						Section average	Departure from the normal	Greatest monthly		Least monthly	
			Station	Highest	Date	Station	Lowest	Date			Station	Amount	Station	Amount
	°F.	°F.		°F.			°F.		In.	In.		In.		In.
Alabama	72.4	+1.0	Geneva	99	23	Valley Head	39	8	3.18	−0.77	Citronelle	7.82	Tuskegee	0.60
Arizona	67.0	+.9	Mohawk	110	17	Alpine	13	11	.03	−.29	Fort Defiance	.94	97 stations	.00
Arkansas	68.7	−.3	Fordyce	97	24	3 stations	35	7	5.15	+.09	Mena	9.53	Osceola	1.44
California	58.6	−2.8	Greenland Ranch	117	15	Twin Lakes	−2	1	1.30	+.36	Elk Valley	5.96	33 stations	.00
Colorado	54.2	+1.8	La Junta	99	20	2 stations	11	10	1.59	−.31	North Lake	5.71	Olathe	.00
Florida	77.4	+1.8	2 stations	99	23	Bushnell	46	8	2.44	−1.49	Peters	7.63	Hillsboro River Park	.14
Georgia	72.3	+.8	do	99	[1] 18	Blairsville	34	8	4.02	+.54	Brooklet	8.59	Cairo	.53
Idaho	52.8	−.3	Orofino	100	27	Grouse	9	9	2.57	+.88	Pierce R. S.	8.38	Grand View	.02
Illinois	60.9	−1.8	2 stations	90	[1] 21	Marengo	26	8	3.76	−.39	Grand Tower	7.80	Bluffs	1.51
Indiana	60.7	−1.5	Crane	93	10	Wheatfield	28	8	3.93	−.18	La Porte	11.04	Pendleton	1.94
Iowa	59.2	−1.3	Britt	97	20	Decorah	26	8	2.34	−1.62	Dubuque	6.02	Pocahontas	.41
Kansas	64.7	+.9	Medicine Lodge	104	21	2 stations	26	12	2.69	−1.11	Garnett Ks.	7.35	Medicine Lodge	.18
Kentucky	64.1	−1.2	Pikesville	94	11	Williamsburg	35	8	3.32	−.66	Paducah	6.04	Tompkinsville	.94
Louisiana	75.1	+1.4	Donaldsonville	96	[1] 18	Clinton	43	8	3.20	−1.52	Plain Dealing	9.83	Chandeleur Light-house.	.53
Maryland-Delaware.	62.6	−.3	2 stations	94	11	Oakland, Md.	31	6	7.14	+3.48	Lewes, Del.	14.62	Chewsville, Md.	3.25
Michigan	52.1	−2.0	Waters Meet	90	27	Munesing	21	10	2.70	−.61	Dowagiac	6.55	Lanse	.10
Minnesota	55.6	+.5	Argyle	96	19	Cloquet	19	8	1.26	−1.96	Spring Grove	4.02	Ah-gwah-ching	.20
Mississippi	72.4	+.6	Yazoo City	97	2	Edinburg	42	7	3.00	−1.30	Biloxi	6.04	Vaiden	1.05
Missouri	63.9	−.5	4 stations	92	[1] 20	2 stations	33	[1] 6	3.50	−1.30	Farmington	6.88	Moberly	1.25
Montana	53.0	+1.0	Glendive	103	18	Summit	18	4	2.69	+.59	Babb	6.01	Westby	.70
Nebraska	60.6	+1.4	2 stations	99	[1] 20	Tryon	21	4	2.03	−1.36	Fairbury	6.42	Kowanda	.46
Nevada	55.5	−.4	Las Vegas Airport	102	16	Marlette Lake	8	1	.58	−.27	Marlette Lake	2.40	15 stations	.00
New England	52.9	−2.2	Waterbury, Conn.	90	12	Lemington, Vt.	22	4	6.50	+3.02	Segreganset, Mass.	10.52	Montpelier, Vt.	2.97
New Jersey	60.0	−.6	Chatsworth	95	11	Layton	25	2	8.06	+4.44	Mays Landing	11.96	2 stations	5.39
New Mexico	62.1	+2.4	Carlsbad	104	16	Luna Ranger Station	15	11	1.44	+.22	Levy	5.95	8 stations	.00
New York	53.9	−2.1	2 stations	92	11	Walton	22	2	4.68	−1.02	Cutchogue, N. Y.	10.58	Massena High School.	2.11
North Carolina	66.9	.0	Tarboro	99	2	Mount Mitchell	24	8	4.78	+.78	Mocksville	10.26	Swannanoa	1.40
North Dakota	55.1	+1.7	Granville	101	19	Center	24	12	1.38	−.88	Dunn Center	3.73	Ashley	.06
Ohio	58.7	−1.8	Tronton	91	11	Marietta (water works).	32	8	3.75	−2.07	Wauseon	6.57	Norwich	1.10
Oklahoma	69.1	+.8	Alva	105	22	2 stations	33	[1] 4	4.76	.00	Caney	15.30	Cherokee	.28
Oregon	51.0	−2.3	3 stations	95	[1] 27	Fremont	9	9	3.07	+1.28	Valsetz	9.68	Crescent Lake	.45
Pennsylvania	58.0	−1.7	York	95	11	Wallenpaupack	24	11	5.24	+1.23	Pottstown	10.67	Dushore	2.67
South Carolina	71.2	+.3	Columbia Airport	102	21	2 stations	39	[1] 8	5.52	+2.01	Ridgeland	12.03	Winthrop College	2.85
South Dakota	57.4	+1.1	Tyndall	99	20	Longvalley	16	2	1.81	−1.03	Van Metre	4.94	Aberdeen	.28
Tennessee	66.2	−.07	Samburg	91	21	Rugby	31	8	2.73	−1.39	Moscow	5.86	McEwen	.75
Texas	74.9	+1.9	Rio Grande City	112	2	Dalhart	32	6	3.68	−.02	Gonzales	12.07	Presidio	.00
Utah	56.3	+.8	2 stations	98	[1] 7	2 stations	12	[1] 3	.48	−.72	Pineview Dam	3.31	14 stations	.00
Virginia	63.9	−.3	Fredericksburg	97	10	do	30	[1] 8	5.44	+1.68	Langley Field	13.00	Davenport	1.85
Washington	50.8	−1.8	Richland	96	26	Paradise Ranger Station.	18	1	5.26	+3.36	South Olympic Tree Farm.	15.67	Dallesport	1.05
West Virginia	60.5	−1.2	Moorefield	96	12	2 stations	28	6	4.28	+.27	Alpena	10.09	Hogsett	1.79
Wisconsin	54.4	−.8	5 stations	92	20	Mellen	12	8	2.12	−1.52	Brodhead	6.60	Lac Vieux Desert	.31
Wyoming	52.4	+2.7	Fort Laramie	100	22	Foxpark	6	1	1.13	−.93	Dull Center	3.33	Rock Springs	.05
(APRIL)														
Alaska	25.9	−1.4	Tree Point	70	23	Umiat	−31	17	.95	−.51	Attu	10.27	6 stations	.00
Hawaii	71.8	+.2	Akweli	89	6	Haleakala Ranger Station.	36	6	6.13	+.06	Kukua	42.0	5 stations	.00
Puerto Rico	78.3	+1.4	Mayaguez	96	1	2 stations	57	[1] 11	6.72	−.57	Rio Blanco	19.07	Mona Island	.72

[1] Other dates also.

CLIMATOLOGICAL DATA FOR WEATHER BUREAU STATIONS FOR MAY 1948

District and station	Elevation of instruments: Barometer above sea level [1]	Elevation of instruments: Thermometer above ground	Elevation of instruments: Anemometer above ground	Pressure: Station	Pressure: Sea level	Pressure: Departure from normal	Temperature of the air: Averages: Mean maximum	Mean minimum	Mean	Departure from normal	Temperature of the air: Extremes: Highest	Date	Lowest	Date	Greatest daily range	Total heating degree days	Mean temperature of the dew point	Mean relative humidity	Precipitation: Total	Departure from normal	Greatest in 24 hours	Days with 0.01 inch or more	Days with thunderstorms	Total snowfall (unmelted)	Snow, sleet, and ice on ground at end of month	Wind: Average hourly speed	Prevailing direction	Maximum velocity: Miles per hour	Direction	Date	Character of day (sunrise to sunset), number of days: Clear	Partly cloudy	Cloudy	Average cloudiness, tenths (sunrise to sunset)	Possible sunshine
NEW ENGLAND	*Ft.*	*Ft.*	*Ft.*	*Mb.*	*Mb.*	*Mb.*	°F.	°F.	°F.	°F.	°F.		°F.		°F.		°F.	%	*In.*	*In.*	*In.*			*In.*	*In.*	*m.p.h.*					*0-3*	*4-7*	*8-10*	*0-10*	%
Caribou [2]	628	5	33	990.2	1,013.5	.....	60	40	49.6	+1.1	79	27	28	4	33	478	40	72	5.91	+2.9	2.25	14	1	T	0	....	nw.	..	.....	..	3	8	20	7.8	..
Eastport	75	67	82	1,011.2	1,013.9	.0	52	39	45.8	−1.9	63	28	35	4	24	596	40	84	5.66	+2.6	1.60	13	0	0	0	9.6	s.	22	4	5	5	22	7.8	46
Portland, Me. [2]	103	6	43	1,010.8	1,013.2	−1.4	58	42	50.0	−1.2	68	29	28	4	40	467	44	82	7.74	+4.3	2.19	21	2	0	0	8.8	s.	29	ne.	14	2	6	23	8.0	27
Concord [2]	289	5	45	1,000.7	1,013.5	−1.1	62	43	52.8	−.1	82	27	29	2	45	385	44	76	5.04	+2.0	1.32	18	4	0	0	7.2	se.	25	nw.	19	2	6	23	8.0	26
Mt. Washington	6,274	5	37	803.1	1,017.3	.....	38	28	32.7	−3.0	54	27	14	19	18	1002	30	90	5.90	+.2	1.13	19	0	14.7	0	29.5	w.	89	nw.	19	3	2	26	8.6	17
Burlington [2]	403	6	51	999.7	1,012.2	−2.0	64	44	54.0	−2.5	83	27	32	3	38	349	44	74	3.03	+.2	.59	16	2	0	0	8.6	s.	27	nw.	18	4	9	18	7.0	34
Boston [2]	124	33	62	1,012.2	1,013.2	−1.4	62	48	55.0	−2.1	83	10	42	14	32	313	44	76	5.37	+2.2	1.73	16	4	0	0	11.3	ne.	35	ne.	14	4	6	21	7.6	39
Nantucket [2]	12	4	34	1,012.9	1,013.5	−1.1	58	45	51.4	−.9	70	29	32	4	25	420	48	90	8.24	+5.4	3.00	14	3	0	0	14.0	se.	36	ne.	6	4	10	17	7.1	42
Block Island	26	11	46	1,011.9	1,012.5	−2.1	58	47	52.4	−.4	71	29	40	4	17	393	48	92	8.37	+4.9	1.75	13	4	0	0	14.4	s.	39	se.	16	6	7	18	6.9	52
Providence [2]	159	65	60	1,010.8	1,013.2	−1.4	66	49	57.4	−1.1	85	12	40	2	34	253	46	78	9.25	+6.3	1.97	15	5	0	0	8.8	ne.	30	sw.	23	3	9	19	7.5	47
Hartford [2]	159	5	44	1,012.2	1,013.2	−1.7	67	48	57.4	−.1	85	12	32	2	38	254	48	76	4.81	+1.2	1.06	15	4	0	0	8.8	s.	29	n.	12	3	8	20	7.6	43
New Haven [2]	107	5	39	1,012.5	1,012.9	−2.0	64	48	55.8	+.4	75	29	34	2	30	283	48	78	7.77	+4.4	1.80	15	4	0	0	7.5	ne.	23	e.	5	4	8	19	7.2	47
MIDDLE ATLANTIC									62.1	−.1								74	6.76	+3.3													6.9	
Albany [2]	97	6	40	1,001.4	1,012.2	−2.0		46	56.2	−1.5	83	28	32	2	40	290	46	70	4.75	+2.2	1.31	13	3	0	0	8.1	n.	29	w.	19	3	6	22	7.4	46
New York [4]	314	415	454	1,011.2	1,012.9	−1.7	66	52	59.0	−1.6	84	12	42	9	26	209	49	74	8.82	+5.6	2.70	15	2	0	0	12.7	s.	42	n.	21	6	11	14	7.0	49
Allentown [2]	385	4	58	999.0	1,012.9	.....	66	49	59.6	−.9	90	11	33	9	43	296	49	74	7.88	+4.4	2.75	14	1	0	0	....	sw.	..	.....	..	2	9	20	7.8	..
Harrisburg [2]	374	30	49	999.7	1,012.5	−2.7	70	52	61.4	−.4	92	11	39	9	41	158	50	70	5.64	+2.2	1.15	15	4	0	0	7.9	nw.	26	w.	21	0	10	21	7.8	53
Philadelphia [4]	114	174	150	1,011.5	1,012.5	−3.1	71	54	62.2	−.7	88	11	45	9	32	134	52	74	6.88	+3.6	1.83	14	3	0	0	8.0	s.	23	sw.	16	4	12	15	7.0	48
Reading	323	47	306	1,001.0	1,012.9	−2.0	70	53	62.0	+.1	93	11	38	9	40	152	....	..	8.50	+4.8	2.69	15	5	0	0	11.0	se.	47	n.	21	4	7	20	7.3	40
Scranton	805	72	104	983.4	1,012.5	−2.7	71	49	58.4	−1.0	91	11	35	2	36	238	....	..	4.10	+.8	.71	17	2	0	0	6.6	n.	28	nw.	21	5	15	11	6.5	53
Atlantic City	52	37	172	1,010.5	1,012.5	−2.7	68	52	57.9	−.2	79	21	44	4	27	222	52	84	8.80	+5.8	3.24	15	7	0	0	15.7	s.	40	e.	7	2	11	18	7.4	60
Newark [2]	30	5	46	1,011.5	1,012.5	.....	64	51	60.0	−1.4	91	12	38	9	35	190	50	74	8.12	+4.2	2.31	15	3	0	0	....	ne.	..	.....	..	5	10	16	7.0	..
Trenton	190	89	107	1,005.8	1,012.5	−2.7	68	52	61.1	.0	90	11	42	9	35	168	....	..	8.03	+5.0	1.71	17	8	0	0	9.4	s.	28	w.	8	2	12	17	7.2	44
Baltimore [4]	123	100	215	1,012.2	1,012.9	−2.3	70	57	65.0	+.6	90	10	48	8	31	80	53	73	6.41	+2.9	1.25	15	6	0	0	11.0	s.	36	w.	8	3	14	14	6.7	57
Washington [4]	112	56	100	1,009.1	1,013.5	−1.7	73	56	65.4	+1.7	92	11	45	6	39	77	53	70	8.59	+4.9	2.17	16	10	0	0	7.6	s.	25	nw.	21	2	11	18	7.3	51
Cape Henry	18	8	54	1,012.5	1,013.2	−2.4	75	58	66.2	+2.0	87	10	50	8	30	46	58	78	5.12	+1.6	1.17	12	6	0	0	11.0	se.	37	w.	17	11	9	11	5.5	74
Lynchburg [2]	686	5	58	980.0	1,013.2	−2.4	74	55	64.9	−1.0	86	10	45	8	34	58	54	74	4.13	+.5	1.44	12	8	0	0	8.4	sw.	32	s.	12	5	11	15	6.4	58
Norfolk [4]	91	80	125	1,012.5	1,013.5	−2.4	74	59	68.1	+1.9	87	10	51	1	30	22	56	76	6.98	+3.2	2.45	12	7	0	0	9.7	s.	29	se.	29	8	8	15	6.3	64
Richmond [4]	144	11	52	1,006.4	1,012.5	−3.1	77	56	66.7	+.2	87	10	46	8	35	39	56	74	5.47	+1.7	1.22	18	11	0	0	7.6	s.	29	w.	7	8	8	15	6.1	67
SOUTH ATLANTIC							77																										5.3	
									71.2	+1.4								70	4.94	+1.4															
Asheville	2,253	77	92	941.1	1,014.2	−2.1	76	52	63.8	+1.2	85	10	41	15	41	80	50	70	2.64	−.8	.91	14	6	0	0	7.8	nw.	26	nw.	7	9	10	12	5.8	78
Charlotte [4]	779	63	86	986.1	1,013.9	−2.0	80	60	70.0	+1.1	91	21	47	8	32	12	55	65	5.88	+2.2	1.92	12	10	0	0	6.8	sw.	24	w.	7	10	8	13	5.6	70
Greensboro [2]	886	6	56	982.7	1,014.2	−2.4	79	55	66.8	+.4	88	21	43	8	39	35	54	70	4.45	+.4	2.07	13	7	0	0	8.2	sw.	26	nw.	7	9	10	12	5.9	64
Hatteras	11	5	47	1,013.2	1,013.9	−2.0	75	65	70.1	+1.4	80	29	57	4	15	3	62	76	4.13	+.4	1.69	8	6	0	0	12.3	sw.	35	nw.	7	8	12	11	5.7	78
Raleigh [4]	376	5	71	999.7	1,013.2	−2.4	81	59	69.6	+1.1	90	21	48	8	36	10	56	70	3.23	−.6	.97	13	7	0	0	6.8	s.	22	nw.	7	8	16	7	5.2	66
Wilmington	72	73	107	1,012.9	1,014.2	−2.1	80	63	71.2	+.4	88	3	52	8	25	3	61	74	5.22	+1.8	1.57	13	9	0	0	9.5	se.	39	nw.	17	12	11	8	4.7	75
Charleston [4]	48	11	92	1,011.9	1,013.5	−2.8	80	67	73.9	+1.2	89	14	56	8	20	0	63	78	7.05	+4.0	1.26	14	10	0	0	10.6	se.	34	se.	12	14	6	11	4.8	75
Columbia, S. C. [4]	347	70	91	1,001.0	1,013.5	−2.4	84	62	73.0	+1.1	94	21	49	8	34	2	58	68	5.77	+2.7	1.66	11	7	0	0	7.8	s.	35	w.	2	16	4	11	4.7	69
Greenville, S.C. [2]	1,040	18	36	976.6	1,013.2	−2.4	80	58	69.0	+1.8	93	21	42	8	38	21	55	65	7.74	+3.7	3.69	14	13	0	0	8.7	ne.	33	n.	24	11	8	12	5.6	70
Augusta [4]	182	62	77	1,007.1	1,013.2	−2.4	85	63	74.0	+1.6	95	21	50	8	38	1	57	62	5.26	+2.2	1.82	9	9	0	0	5.9	nw.	28	w.	25	10	10	11	5.2	82
Savannah [2]	65	19	51	1,011.5	1,013.5	−2.8	85	65	74.7	+3.0	95	22	53	8	29	0	64	74	5.77	+2.8	1.48	11	12	0	0	9.6	se.	38	se.	4	9	10	12	5.7	59
Jacksonville [4]	43	86	110	1,012.5	1,013.9	−2.4	88	68	78.1	+3.1	95	22	57	8	27	0	64	66	2.12	−1.9	.95	7	7	0	0	8.5	w.	32	sw.	28	13	9	9	4.8	71
FLORIDA PENINSULA																																	4.8	
									78.8	+1.2								73	2.63	−1.9															
Key West [4]	21	10	64	1,013.2	1,013.9	−1.0	86	76	80.8	+1.7	88	7	65	1	18	0	70	72	.88	−2.7	.28	6	5	0	0	7.5	e.	23	se.	9	15	9	7	4.1	74
Miami [4]	25	242	249	1,013.2	1,014.2	−1.7	82	73	77.3	+.1	87	7	65	30	20	0	69	76	6.50	−.6	2.36	9	5	0	0	10.6	se.	43	ne.	30	8	13	10	5.7	68
Tampa [2]	35	5	36	1,013.2	1,014.2	−1.7	88	68	78.2	+1.9	92	27	57	8	31	0	66	71	.51	−2.5	.41	5	5	0	0	7.4	w.	29	sw.	29	14	12	5	4.6	86
EAST GULF																																	5.0	
									74.2	+1.5								69	3.63	−.1															
Atlanta [2]	1,173	33	72	972.6	1,012.9	−3.0	82	59	70.7	+.4	92	24	48	8	34	7	55	63	7.83	+4.4	5.13	7	6	0	0	8.9	e.	31	w.	2	12	10	9	5.1	80
Macon [4]	370	79	87	1,000.3	1,013.2	−2.7	86	61	73.0	+.7	94	21	46	8	38	3	56	61	3.39	+.4	.81	8	8	0	0	5.7	n.	34	sw.	28	9	10	12	5.7	77
Thomasville	273	48	....	1,004.7	1,014.6	−1.0	88	65	76.4	+2.4	95	24	53	8	29	1	....	..	1.81	−1.8	1.11	4	4	0	0	....	..	..	.....	..	10	18	2	....	..
Apalachicola	35	11	51	1,012.9	1,013.9	−2.0	85	69	77.0	+2.4	93	23	59	8	22	0	67	76	2.88	−.5	2.42	5	6	0	0	8.2	sw.	21	nw.	7	13	11	7	4.4	73
Pensacola [4]	56	54	79	1,011.9	1,013.9	−2.0	84	69	76.5	−2.6	92	31	56	7	23	0	64	70	4.45	+1.1	4.09	3	3	0	0	7.8	w.	31	nw.	6	14	9	8	4.5	82
Anniston	618	6	32	995.3	1,014.6	−1.0	84	55	69.4	+.3	93	24	43	8	40	17	56	68	2.89	−1.0	1.50	6	6	0	0	....	ne.	..	.....	..	9	15	7	....	..
Birmingham [2]	700	5	63	989.2	1,014.2	−2.7	83	57	69.8	+.5	91	12	44	8	38	10	56	64	2.43	−1.5	1.24	5	5	0	0	7.7	n.	28	sw.	2	9	13	9	5.3	66
Mobile [4]	57	86	161	1,011.9	1,013.9	−1.7	86	67	76.1	+1.7	93	22	54	8	27	0	63	71	5.50	+1.2	2.49	6	6	0	0	8.3	s.	34	nw.	6	11	13	7	4.6	75
Montgomery [4]	218	92	105	1,005.8	1,013.5	−2.4	86	64	74.9	+1.5	95	24	53	8	30	1	59	64	3.23	−.6	2.13	6	5	0	0	6.8	n.	31	nw.	6	14	9	8	4.2	82
Meridian [4]	375	67	92	1,000.7	1,013.9	−1.3	84	62	72.8	+1.5	91	22	48	8	34	4	61	71	4.72	+.4	1.91	7	9	0	0	5.6	n.	22	w.	6	12	9	10	5.1	71
Vicksburg [4]	247	82	102	1,005.1	1,013.9	−1.3	83	64	72.9	+.7	91	23	54	7	28	1	62	76	3.95	−.4	2.21	6	8	0	0	7.6	n.	34	nw.	6	10	9	12	5.4	78
New Orleans C. O	53	76	84	1,011.9	1,013.9	−1.3	86	70	78.4	+3.0	91	21	62	6	20	0	66	70	2.32	−2.3	1.45	5	5	0	0	6.3	sw.	21	ne.	17	9	10	12	5.5	78
New Orleans A. P. [3]	30	6	52	1,011.9	1,013.5	.....	87	67	76.6	.....	92	17	54	8	27	0	66	74	1.74	.....	.....	3	5	0	0	....	s.	..	.....	..	11	10	10	5.3	..
WEST GULF																																	6.0	
									75.9	+1.6								74	3.86	−.1															
Shreveport [2]	181	5	64	1,004.4	1,013.5	−1.1	84	64	73.8	+.7	91	23	48	7	30	2	63	74	6.92	+2.7	2.83	9	8	0	0	8.5	s.	32	w.	5	8	9	14	6.0	74
Fort Smith [2]	463	6	30	997.0	1,012.9	−.3	80	58	69.0	−.6	90	1	43	7	34	21	58	73	5.41	+.6	2.21	11	11	0	0	7.3	ne.	38	ssw.	10	7	11	13	6.2	59
Little Rock [2]	265	26	58	1,001.4	1,014.2	.0	79	60	69.9	−.4	89	23	48	7	32	9	58	71	4.56	−.2	1.36	12	7	0	0	7.8	ne.	28	nw.	10	9	9	13	6.1	65
Austin [3]	621	5	41	990.9	1,012.2	−.7	87	65	76.2	+1.6	94	31	52	7	30	0	64	72	4.48	−.2	1.66	5	10	0	0	9.7	s.	34	nw.	26	8	15	8	5.3	71
Brownsville [3]	20	5	54	1,008.5	1,010.5	−1.4	89	72	80.0	+1.4	92	30	64	7	25	0	71	82	2.78	+.2	1.64	7	4	0	0	12.5	se.	39	e.	26	3	17	11	6.5	71
Corpus Christi [3]	44	6	33	1,011.2	1,011.9	−1.0	88	70	78.8	+4.3	92	27	64	21	24	0	71	84	1.77	.....	1.06	5	5	0	0	11.5	se.	34	se.	11	10	10	11	5.7	63
Dallas [2]	488	34	45	994.2	1,012.5	−.4	84	64	73.8	+.9	94	22	49	7	33	4	62	72	7.79	+3.3	4.05	9	8	0	0	11.0	s.	35	s.	8	8	9	14	6.0	71
Fort Worth [3]	706	40	56	998.8	1,012.9	.0	83	63	73.2	+1.0	92	16	50	7	32	4	61	72	4.34	−.3	1.84	10	8	0	0	11.2	s.	36	s.	8	8	10	13	5.9	66
Galveston [4]	54	122	129	1,011.2	1,013.2	−1.4	82	73	77.4	+2.6	90	31	63	6	17	0	70	82	1.73	−1.7	1.20	5	4	0	0	11.7	s.	41	w.	27	8	13	10	5.4	69
Houston [4]	138	157	190	1,007.8	1,012.9	−1.0	86	69	77.6	+2.1	92	17	59	7	24	0	67	79	5.55	+1.0	1.92	8	8	0	0	10.1	se.	30	n.	6	4	13	14	6.4	50
Laredo [3]	418	10	38	995.3	1,009.8	.....	94	72	83.2	+2.2	110	1	65	7	38	0	66	62	1.23	−2.5	.91	3	5	0	0	....	se.	..	.....	..	6	10	15	6.3	..
Palestine	510	64	72	995.6	1,013.2	−.7	82	65	73.5	+.8	90	30	55	7	26	0	63	72	1.56	−3.0	.61	7	8	0	0	7.1	s.	20	ne.	17	8	7	16	6.2	63
Port Arthur [4]	34	59	134	1,011.9	1,012.9	−1.3	85	70	77.5	+2.3	92	31	58	7	22	0	66	80	4.29	+.2	1.67	7	5	0	0	12.2	s.	34	2 w.	11	9	10	12	5.8	71
San Antonio [3]	794	6	51	987.1	1,011.5	−1.0	90	66	78.2	+3.1	97	1	52	7	32	0	64	68	1.59	−1.6	1.13	4	4	0	0	9.8	se.	5	nw.	11	10	11	10	5.8	68

See footnotes at end of table.

CLIMATOLOGICAL DATA FOR WEATHER BUREAU STATIONS FOR MAY 1948—Continued

District and station	Elevation of instruments: Barometer above sea level [1]	Elevation of instruments: Thermometer above ground	Elevation of instruments: Anemometer above ground	Pressure: Station	Pressure: Sea level	Pressure: Departure from normal	Temperature of the air: Averages: Mean maximum	Temperature of the air: Averages: Mean minimum	Temperature of the air: Averages: Mean	Temperature of the air: Averages: Departure from normal	Temperature of the air: Extremes: Highest	Temperature of the air: Extremes: Date	Temperature of the air: Extremes: Lowest	Temperature of the air: Extremes: Date	Temperature of the air: Extremes: Greatest daily range	Total heating degree days	Mean temperature of the dew point	Mean relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: Days with 0.01 inch or more	Precipitation: Days with thunderstorms	Precipitation: Total snowfall (unmelted)	Precipitation: Snow, sleet, and ice on ground at end of month	Wind: Average hourly speed	Wind: Prevailing direction	Wind: Maximum velocity: Miles per hour	Wind: Maximum velocity: Direction	Wind: Maximum velocity: Date	Character of day (sunrise to sunset), number of days: Clear	Character of day (sunrise to sunset), number of days: Partly cloudy	Character of day (sunrise to sunset), number of days: Cloudy	Average cloudiness, tenths (sunrise to sunset)	Possible sunshine
OHIO VALLEY AND TENNESSEE	Ft.	Ft.	Ft.	Mb.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.		°F.		°F.	%	In.	In.	In.			In.	In.	m. p.h.								0-10	%
									63.4	−.5								69	3.08	−.7														6.3	
Chattanooga [2]	762	6	66	986.8	1,013.9	−2.0	82	54	67.8	+2.3	90	12	41	8	41	27	55	68	2.96	−.8	.97	8	7	0	0	7.3	n.	33	se.	6	11	8	12	5.5	68
Knoxville [2]	995	27	71	979.0	1,014.2	−1.7	79	56	67.4	+.7	87	11	43	8	37	40	53	64	3.28	−.5	1.42	7	5	0	0	8.1	sw.	37	sw.	4	8	10	13	5.8	59
Memphis [2]	399	5	49	999.7	1,013.5	−1.4	81	59	70.0	+.2	90	23	49	8	36	16	57	66	2.28	−1.9	1.05	8	4	0	0	7.5	n.	29	nw.	2	8	9	14	5.9	73
Nashville [2]	546	5	72	994.6	1,014.2	−1.7	79	56	67.7	−.5	88	30	44	8	37	27	55	66	1.65	−2.2	.46	7	5	0	0	8.6	n.	40	nw.	2	10	9	12	5.7	67
Lexington [2]	989	4	58	979.3	1,014.9	−.7	73	52	62.3	−2.0	85	11	42	5	32	121	52	72	3.56	−.2	.89	11	7	0	0	----	ne.	--	------	--	4	17	10	6.1	--
Louisville [2]	525	5	54	997.3	1,014.2	−1.4	76	54	65.1	.0	88	10	46	8	37	64	51	65	2.63	−1.1	.80	9	6	0	0	7.2	s.	33	sw.	2	4	12	15	7.0	62
Evansville [2]	431	6	40	999.0	1,014.2	−1.0	75	52	63.8	−.5	85	10	42	5	35	81	53	70	4.19	+.3	1.84	10	9	0	0	7.9	nw.	32	ne.	1	6	10	15	6.6	71
Indianapolis [2]	823	5	54	984.8	1,014.2	−1.0	72	50	60.8	−.6	85	10	41	7	33	155	48	67	3.26	------	1.00	10	3	0	0	9.8	ne.	34	nw.	7	8	10	13	5.9	61
Terre Haute [2]	575	4	36	994.2	1,014.9	.0	73	49	61.0	−2.4	85	21	38	5	35	146	50	69	3.33	−.5	1.08	10	6	0	0	8.7	n.	30	w.	2	8	11	12	6.0	63
Cincinnati [4]	627	135	148	991.9	1,014.9	−.7	74	54	64.0	+.9	88	11	45	7	33	89	50	69	2.81	−.9	.81	9	7	0	0	5.0	nw.	19	nw.	21	3	14	14	6.5	--
Columbus [4]	822	90	110	984.4	1,013.5	−2.1	71	51	61.0	−1.3	87	11	39	8	31	155	49	70	3.34	−.2	1.22	12	7	0	0	9.5	n.	35	sw.	2	8	9	14	5.9	61
Dayton [2]	1,003	6	55	978.3	1,014.2	−.7	70	49	59.8	−2.0	83	11	35	8	30	180	48	68	2.41	−1.2	.60	8	4	0	0	10.7	ne.	36	w.	7	8	10	13	5.9	--
Elkins [2]	1,947	5	45	943.4	1,014.2	−2.1	70	46	57.7	.0	87	10	32	20	42	234	50	80	4.51	+.5	1.07	17	9	0	0	7.2	w.	34	nw.	17	1	9	21	7.8	51
Parkersburg	637	77	84	----	----	----	73	51	62.2	−1.6	91	11	41	20	37	133	----	--	2.79	−.6	.71	11	6	0	0	6.8	nw.	28	nw.	17	7	9	15	6.4	57
Pittsburgh [2]	842	39	54	967.5	1,012.9	−2.3	70	49	59.8	−.4	89	11	38	8	33	193	48	69	3.17	.0	.60	14	4	0	0	10.6	nw.	31	n.	21	4	11	16	6.9	50
LOWER LAKES																																		6.4	
									54.9	−1.9								72	3.85	+.5															
Buffalo [2]	768	34	96	987.5	1,013.2	−1.7	64	43	53.2	−2.7	84	27	33	8	34	372	45	76	3.12	.0	.96	15	4	T	0	12.1	ne.	44	sw.	7	4	13	14	6.9	61
Canton	448	10	61	995.9	1,011.9	−1.6	64	43	53.4	−.8	83	28	34	3	36	365	43	70	3.23	+.2	.70	14	1	0	0	7.0	w.	24	sw.	8	6	8	17	6.8	54
Oswego	335	71	85	1,000.3	1,012.9	−1.7	58	44	51.2	−2.5	81	28	35	8	31	431	42	74	3.49	+.4	.88	15	5	T	0	7.8	w.	28	w.	12	8	7	16	6.6	48
Rochester [2]	523	4	69	992.9	1,013.2	−2.0	63	43	53.4	−2.7	85	27	32	1	40	367	44	76	3.39	+.4	.76	16	4	.5	0	9.3	n.	38	sw.	8	6	9	16	6.9	55
Syracuse [2]	596	5	57	998.3	1,013.2	−2.0	65	43	54.2	−2.1	82	27	32	2	39	345	44	72	3.87	+.9	.72	17	6	T	0	9.0	nw.	30	sw.	8	5	10	16	6.9	45
Erie [4]	714	57	81	986.8	1,015.5	−1.7	62	46	54.3	−2.5	73	27	30	8	40	333	45	76	3.79	+.4	1.03	16	6	T	0	7.6	w.	25	w.	7	7	14	10	6.0	41
Cleveland [2]	762	27	54	986.1	1,013.9	−1.3	68	45	56.6	−1.5	86	11	35	24	37	268	46	69	4.39	+1.3	1.04	14	3	0	0	9.8	n.	34	w.	21	6	11	14	6.4	65
Sandusky	629	5	67	991.2	1,014.2	−1.0	66	48	57.3	−1.9	79	28	37	8	31	237	----	--	3.95	+.8	.97	14	5	0	0	8.3	e.	30	nw.	16	8	11	12	5.8	63
Toledo [2]	628	5	47	991.2	1,014.2	−1.0	67	46	56.4	−1.6	84	28	33	8	34	268	46	70	4.03	+.5	1.33	16	5	0	0	9.9	ne.	34	n.	21	7	10	14	6.4	56
Fort Wayne [2]	857	5	34	983.4	1,014.2	−1.0	69	47	58.0	−1.2	83	28	33	8	38	227	48	71	4.16	+.3	1.81	11	3	0	0	7.8	n.	34	n.	7	13	6	12	5.4	68
Detroit [2]	730	5	77	988.2	1,014.6	−.6	66	45	55.4	−1.4	84	28	35	8	32	298	42	66	4.96	+.2	2.53	12	3	0	0	9.1	n.	36	nw	10	7	11	13	6.4	59
UPPER LAKES																																		5.4	
									51.7	−.8								66	2.44	−.8															
Alpena	609	5	89	992.6	1,014.9	.0	58	40	49.3	−1.2	85	20	33	8	38	487	39	69	2.05	−1.0	.76	6	2	.1	0	10.0	nw.	39	nw.	21	8	8	15	6.1	60
Escanaba	612	51	72	993.2	1,015.6	+.4	53	40	48.8	−.8	76	22	32	7	34	501	38	69	1.18	−1.8	.67	8	1	T	0	11.7	n.	43	n.	21	10	10	11	5.6	66
Grand Rapids [4]	707	70	244	989.2	1,014.9	.0	66	45	55.4	−2.6	78	31	33	8	31	298	42	68	3.37	−.1	1.58	12	4	T	0	10.1	ne.	37	sw.	20	13	8	10	5.0	64
Lansing [4]	878	5	90	982.7	1,014.9	.0	65	44	54.2	−2.7	81	28	33	8	32	335	42	66	5.35	+1.9	2.88	14	4	T	0	7.5	n.	26	nw.	21	8	12	11	5.7	56
Marquette	734	44	73	989.2	1,016.6	+1.4	56	40	48.0	−1.0	87	20	30	9	44	534	36	65	.56	−2.4	.19	5	3	T	0	8.2	n.	28	s.	15	9	11	11	5.6	65
Sault Sainte Marie [2]	614	10	52	992.6	1,015.2	.0	60	37	48.3	+.1	77	26	29	10	42	516	36	64	1.46	−1.2	.96	6	3	T	0	11.1	nw.	36	nw.	21	8	12	11	5.9	63
Chicago [2]	673	5	38	990.9	1,015.6	+.7	65	45	55.0	−2.8	83	20	34	8	39	308	42	67	4.80	+1.3	1.72	11	1	0	0	8.9	n.	34	w.	16	12	9	10	5.2	63
Green Bay	617	5	32	993.6	1,016.3	+2.1	65	43	53.8	−1.1	90	20	30	8	43	353	40	62	.91	−2.6	.31	10	5	0	0	8.1	n.	26	w.	20	9	13	9	5.4	65
Milwaukee [2]	681	33	66	991.2	1,016.9	+2.3	61	43	52.3	−.3	82	20	32	8	38	399	40	67	4.05	+.7	2.06	12	3	0	0	12.5	n.	35	ne.	10	11	10	10	5.1	62
Duluth [4]	1,133	5	47	975.3	1,017.3	+2.7	62	41	51.7	+4.4	86	20	27	8	34	436	36	60	.64	−2.6	.21	7	0	0	0	11.4	ne.	34	w.	15	16	11	4	3.9	77
NORTH DAKOTA																																		6.0	
									55.6	+2.1								57	1.05	−1.2															
Fargo [2]	940	5	47	981.7	1,015.9	+2.4	69	42	56.0	+.9	92	19	30	6	43	300	40	58	1.05	−1.8	.62	7	3	0	0	12.5	n.	37	w.	15	8	14	9	5.5	68
Bismarck [2]	1,677	5	41	955.6	1,016.3	+2.4	70	43	56.5	+3.5	96	19	33	10	43	301	41	59	.78	−1.5	.46	6	1	0	0	13.4	e.	45	nw.	15	5	12	14	6.5	75
Devils Lake	1,478	11	44	963.1	1,016.6	+2.7	66	43	54.6	+2.0	94	19	30	9	38	342	39	55	1.37	−.7	1.13	6	3	0	0	9.4	ne.	31	ne.	20	10	11	10	----	--
Grand Forks [2]	832	4	41	986.5	1,016.9	+3.0	69	41	54.8	------	96	19	28	6	43	337	38	59	.72	------	.28	7	2	.6	0	----	n.	--	------	--	10	11	10	----	--
Williston	1,878	42	50	948.2	1,015.2	+2.0	68	44	56.0	+2.0	94	18	30	10	36	313	38	55	1.35	−.7	.50	8	1	0	0	8.9	se.	34	nw.	15	6	14	1	1 6.	07
UPPER MISSISSIPPI																																		5.5	
									60.0	−1.1								65	2.60	−1.5															
Minneapolis-St. Paul [2]	919	43	74	982.7	1,015.9	+2.7	69	48	58.5	+.8	91	20	34	8	33	228	42	58	.74	−2.9	.36	7	1	T	0	10.1	ne.	29	se.	14	11	7	13	5.6	61
La Crosse [2]	672	5	29	989.8	1,015.9	+2.0	68	46	56.9	−1.0	92	20	30	8	37	266	44	66	2.47	−1.3	.98	12	2	0	0	8.0	n.	26	w.	16	12	9	10	5.4	65
Madison [2]	974	27	39	981.0	1,016.6	+2.0	67	43	55.2	−2.4	84	20	30	8	42	310	43	65	2.90	−1.0	1.13	11	5	0	0	9.8	ne.	31	w.	16	9	12	10	5.5	64
Charles City	1,015	10	51	979.7	1,016.6	+2.4	68	47	57.5	−.3	93	20	38	8	36	247	----	--	2.42	−1.9	.79	8	4	0	0	8.3	e.	35	w.	16	11	8	12	5.5	63
Moline [2]	606	6	50	993.6	1,015.9	+1.3	69	46	57.8	−2.5	85	20	39	3	39	232	46	66	2.11	−1.8	.82	11	4	0	0	8.8	n.	33	n.	6	10	8	13	6.1	61
Des Moines [4]	860	5	99	------	1,015.9	+2.4	72	50	61.2	−.1	88	20	43	7	34	153	47	64	2.05	−2.5	1.68	9	1	0	0	5.2	ne.	19	s.	15	11	9	11	5.5	65
Dubuque	699	60	79	991.2	1,016.6	+2.4	68	48	58.1	−2.2	87	20	39	8	34	227	45	66	6.02	+1.8	2.58	12	6	0	0	5.2	ne.	35	w.	16	13	6	12	5.5	68
Burlington [2]	702	4	36	989.8	1,015.2	+1.3	72	48	60.4	−2.2	86	27	38	3	36	167	48	68	2.26	−1.9	.70	11	6	0	0	9.2	ne.	35	w.	16	9	9	13	5.9	80
Cairo	357	5	99	1,001.7	1,014.2	−.4	78	59	68.4	−1.0	90	21	49	7	30	24	----	--	1.97	−1.7	.90	9	3	0	0	8.5	ne.	45	sw.	2	9	9	13	5.5	66
Peoria [2]	609	7	26	993.2	1,015.2	+.3	72	48	59.6	−1.1	86	28	40	3	33	180	47	65	2.55	−1.5	.89	10	6	0	0	9.1	ne.	31	w.	16	9	12	10	5.5	66
Springfield, Ill. [4]	636	5	191	994.6	1,018.0	+3.8	73	50	61.4	+.9	86	28	42	25	34	145	48	66	2.52	−1.9	.96	10	5	0	0	10.3	n.	42	w.	16	9	11	11	5.5	72
St. Louis [4]	568	33	59	994.2	1,014.6	+.4	74	56	65.3	−1.7	85	28	47	7	25	65	----	64	3.17	−1.2	.78	9	5	0	0	9.9	ne.	40	w.	1	9	11	11	----	68
MISSOURI VALLEY																																		6.0	
									62.4	+.4								66	2.32	−1.7															
Columbia, Mo. [4]	784	6	66	986.8	1,014.9	+.3	75	53	64.2	−.8	85	21	40	7	32	80	51	70	3.71	−.8	1.65	10	4	0	0	6.5	e.	31	n.	1	10	9	12	5.5	75
Kansas City [2]	963	38	76	980.0	1,014.6	+1.1	76	55	65.5	+.7	87	20	43	13	31	79	55	63	1.72	−2.2	.66	9	5	0	0	9.4	ne.	34	nw.	6	7	12	12	6.0	64
St. Joseph [2]	967	5	51	979.7	1,014.2	+.7	76	52	64.2	.0	86	22	39	7	33	84	52	70	2.88	−1.8	1.74	10	9	0	0	7.2	s.	26	nw.	6	9	9	13	6.0	60
Springfield, Mo. [2]	1,324	5	50	967.5	1,014.2	.0	73	54	63.2	−.5	86	21	40	7	30	99	52	73	3.48	−1.7	1.49	9	9	0	0	10.1	e.	42	w.	10	6	8	17	6.4	67
Topeka [4]	987	65	87	979.0	1,014.6	+1.4	76	54	65.3	+1.0	89	9	43	7	31	76	53	72	4.48	.0	2.12	12	7	0	0	8.4	s.	39	n.	1	8	9	14	6.4	--
Lincoln [4]	1,189	6	81	971.9	1,014.6	+1.7	75	52	63.0	+1.3	89	20	40	12	34	126	48	67	2.79	−1.3	1.39	7	4	0	0	8.6	n.	27	w.	5	9	9	13	5.8	71
Norfolk, Nebr. [2]	1,551	5	38	959.7	1,014.9	+1.4	73	49	60.7	+.5	94	20	38	6	40	180	46	62	1.01	−2.9	.41	6	3	0	0	----	n.	--	------	--	9	9	13	5.7	--
Omaha [2]	1,105	5	68	975.3	1,014.9	+1.4	75	50	62.7	+.3	90	20	40	12	36	123	47	62	.56	−3.2	.19	5	3	0	0	10.4	n.	34	se.	8	9	8	14	5.9	63
Valentine	2,598	46	54	923.8	1,015.2	+2.0	70	46	57.8	+1.6	92	18	32	6	45	273	41	62	1.34	−1.5	.50	8	2	0	0	10.0	e.	29	s.	18	7	15	9	5.8	70
Huron [2]	1,301	5	41	968.8	1,015.6	+1.7	70	45	57.8	+1.4	93	20	31	6	38	254	44	65	1.26	−1.7	.90	5	1	0	0	11.9	se.	41	nw.	14	7	11	13	6.3	66

See footnotes at end of table.

CLIMATOLOGICAL DATA FOR WEATHER BUREAU STATIONS FOR MAY 1948—Continued

District and station	Elevation of instruments: Barometer above sea level [1]	Elevation of instruments: Thermometer above ground	Elevation of instruments: Anemometer above ground	Pressure: Station	Pressure: Sea level	Pressure: Departure from normal	Temperature of the air: Averages: Mean maximum	Temperature of the air: Averages: Mean minimum	Temperature of the air: Averages: Mean	Temperature of the air: Averages: Departure from normal	Temperature of the air: Extremes: Highest	Temperature of the air: Extremes: Date	Temperature of the air: Extremes: Lowest	Temperature of the air: Extremes: Date	Temperature of the air: Extremes: Greatest daily range	Total heating degree days	Mean temperature of the dew point	Mean relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: Days with 0.01 inch or more	Precipitation: Days with thunderstorms	Precipitation: Total snowfall (unmelted)	Precipitation: Snow, sleet, and ice on ground at end of month	Wind: Average hourly speed	Wind: Prevailing direction	Wind: Maximum velocity: Miles per hour	Wind: Maximum velocity: Direction	Wind: Maximum velocity: Date	Character of day (sunrise to sunset), number of days: Clear	Character of day (sunrise to sunset), number of days: Partly cloudy	Character of day (sunrise to sunset), number of days: Cloudy	Average cloudiness, tenths (sunrise to sunset)	Possible sunshine
NORTHERN SLOPE	*Ft.*	*Ft.*	*Ft.*	*Mb.*	*Mb.*	*Mb.*	°*F.*	°*F.*	°*F.*	°*F.*	°*F*		°*F.*		°*F.*		°*F.*	%	*In.*	*In.*	*In.*			*In.*	*In.*	*m. p. h.*					*0-3*	*4-7*	*8-10*	*0-10*	%
Billings [2]	3,570	16	39	889.3	1,011.9	−1.3	69	45	57.1	+1.0	94	18	33	2	40	284	41	57	2.13	+.1	.64	11	4	T	0	11.7	ne.	45	nw.	14	6	5	20	7.0	54
Butte	5,533	44	58	827.6	1,014.2	-----	61	34	47.6	+.2	80	17	19	14	45	536	34	64	2.55	+.8	.77	14	9	11.0	0	----	se.	----	----	--	4	7	21	7.6	--
Glasgow	2,086	34	53	940.1	1,014.2	-----	71	44	57.9	+2.2	102	18	31	3	41	282	40	55	2.48	+.6	1.78	9	2	T	0	----	e.	----	----	--	4	12	15	6.6	--
Great Falls [2]	3,657	16	75	886.9	1,013.2	-----	63	43	53.0	−1.6	82	17	32	9	34	373	39	63	3.43	+1.2	1.40	15	5	2.4	0	12.2	sw.	47	sw.	14	4	7	20	7.5	61
Havre	2,507	11	67	925.2	1,013.9	+.7	70	44	57.0	+3.6	90	31	34	11	41	276	38	54	.87	−1.2	.55	8	5	T	0	10.3	e.	34	sw.	14	2	17	12	6.7	71
Helena [2]	4,124	5	43	872.0	1,013.5	−.4	64	41	52.4	+.8	86	17	26	3	41	392	38	64	2.58	+.6	1.26	13	6	3.2	0	9.2	w.	38	nw.	4	2	9	20	7.3	54
Missoula [2]	3,263	4	32	899.8	1,013.2	−2.0	64	42	53.0	+.8	84	26	28	2	41	377	40	66	4.10	+2.4	1.31	15	6	1.0	0	8.9	nw.	36	nw.	4	4	4	23	7.8	46
Kalispell	2,973	48	56	909.9	1,012.9	−.6	62	43	52.6	+1.2	81	26	34	10	32	384	40	65	4.36	+2.9	1.68	12	4	T	0	6.0	w.	18	se.	30	4	6	21	7.4	48
Miles City [2]	2,371	5	28	929.9	1,013.5	−.4	70	46	58.0	-----	98	18	30	5	36	286	42	60	1.78	-----	.32	11	4	.2	0	----	se.	----	----	--	4	11	16	7.1	--
Rapid City [2]	3,259	5	56	901.1	1,014.6	−.4	66	43	54.8	+.8	91	19	29	11	42	356	40	66	1.67	−1.3	.62	10	2	1.5	0	14.1	se.	50	nw.	14	1	15	15	7.1	60
Cheyenne [2]	6,094	22	40	811.7	1,011.5	.0	66	39	52.8	+2.5	83	17	24	6	41	379	36	60	.92	−1.5	.29	10	8	T	0	10.3	s.	34	sw.	18	2	12	17	7.0	54
Lander [2]	5,352	6	30	833.4	1,012.2	−.3	69	40	54.4	+3.2	86	17	24	3	42	343	29	44	.60	−1.7	.24	5	7	T	0	9.3	sw.	42	sw.	7	8	14	9	5.4	68
Sheridan [2]	3,790	5	38	882.5	1,012.5	−1.0	70	42	56.4	+4.4	95	17	25	5	44	313	38	59	.81	−1.8	.38	6	7	.4	0	9.6	nw.	56	nw.	14	4	11	16	6.8	63
North Platte [4]	2,821	11	51	915.7	1,013.5	+.3	74	48	61.0	+2.3	94	20	33	12	44	186	43	60	2.37	−.4	1.43	4	3	0	0	7.9	s.	26	n.	8	6	13	12	6.4	67
MIDDLE SLOPE																																				
Denver [4]	5,292	106	113	837.1	1,012.2	+.3	72	48	59.7	+3.5	88	17	32	10	39	202	37	55	1.73	−.5	.78	12	7	T	0	7.9	s.	33	ne.	30	4	13	14	6.6	65
Pueblo [2]	4,690	5	36	855.7	1,012.2	+1.0	75	46	60.3	+1.4	90	14	31	6	50	185	41	57	2.02	+.4	1.07	12	10	1.6	0	7.8	se.	35	sw.	8	3	18	10	6.5	68
Concordia	1,392	50	58	964.8	1,014.2	+.7	74	53	63.3	+.1	88	14	41	12	30	113	50	66	3.07	−1.1	1.43	8	7	0	0	8.7	s.	27	sw.	14	13	3	15	5.6	58
Dodge City [2]	2,509	5	58	926.2	1,012.5	−.4	77	52	64.2	+.7	95	21	37	12	40	125	48	63	2.62	−.3	1.00	9	8	0	0	15.5	se.	45	s.	4	11	8	12	5.5	65
Wichita [2]	1,358	52	64	965.1	1,013.2	+.3	78	54	66.0	+.9	94	21	41	12	32	83	50	62	1.86	−2.6	.95	4	6	0	0	14.5	se.	42	s.	8	9	10	12	5.7	69
Oklahoma City [4]	1,214	10	47	969.9	1,012.5	.0	80	59	69.4	+1.7	93	1	45	12	34	43	57	73	4.97	+.1	1.36	10	6	0	0	8.9	s.	26	s.	9	12	11	8	5.0	68
Tulsa [2]	674	6	60	989.2	1,013.2	-----	80	58	69.0	+1.8	90	21	43	7	34	33	57	73	2.94	−2.1	1.11	8	10	0	0	10.2	se.	43	nw.	10	8	10	13	5.8	57
SOUTHERN SLOPE																																				
Abilene [2]	1,755	4	59	951.2	1,010.8	−.7	87	63	74.8	+4.2	99	5	52	11	35	13	55	60	3.05	.0	.59	9	7	0	0	14.5	s.	45	ne.	31	10	13	8	5.3	67
Amarillo [2]	3,604	5	42	887.8	1,011.4	−.5	79	52	65.8	+3.7	94	21	39	4	42	90	46	58	2.82	−.9	1.54	9	7	0	0	14.8	s.	43	nw.	16	8	13	9	5.3	69
Del Rio	960	63	71	976.6	1,009.1	−.7	91	70	80.3	+3.3	103	1	59	7	32	0	60	56	1.70	−1.2	.94	5	6	0	0	9.8	se.	40	nw.	23	10	14	7	5.0	73
Roswell	3,614	6	29	889.3	1,010.2	.0	86	52	68.9	−.5	97	30	41	4	50	24	38	43	.92	−.2	.68	9	9	0	0	10.1	s.	41	w.	23	9	15	7	5.1	77
Wichita Falls	1,030	4	49	975.6	1,011.5	-----	84	60	72.2	−.1	99	1	45	12	36	22	58	68	6.74	+2.1	2.38	8	7	0	0	----	----	----	----	--	12	11	8	----	--
SOUTHERN PLATEAU																																				
El Paso [2]	3,916	35	85	883.2	1,007.8	−.7	89	60	74.6	+4.6	98	16	51	10	36	0	35	29	T	−.3	T	0	1	0	0	11.4	se.	42	n.	25	20	9	2	3.1	92
Albuquerque [2]	5,314	5	45	836.1	1,008.5	−.6	81	53	66.7	+3.4	92	16	40	4	42	61	35	38	.94	+.3	.64	5	5	0	0	11.8	se.	49	se.	23	16	8	7	3.0	75
Flagstaff	6,907	34	48	789.7	1,013.2	+4.7	71	35	53.0	+2.3	80	15	26	2	45	368	21	30	.13	−.8	.13	2	1	0	0	----	sw.	----	----	--	18	7	6	4.6	--
Phoenix [4]	1,107	39	87	969.5	1,007.8	−.7	93	61	77.0	+2.0	102	15	52	1	38	0	32	22	T	−.1	T	0	0	0	0	7.0	e.	22	w.	8	21	6	4	3.8	--
Tucson [2]	2,555	5	39	921.8	1,008.1	−.7	92	58	75.1	+1.9	101	16	49	2	44	0	28	19	0	−.2	0	0	0	0	0	7.1	se.	28	sw.	18	19	9	3	2.8	96
Yuma	142	9	54	1,003.4	1,008.1	−.7	94	59	76.7	+.5	104	15	51	19	42	1	38	29	0	.0	.0	0	0	0	0	6.0	w.	27	w.	18	29	1	1	3.0	95
MIDDLE PLATEAU																																			1.3	99
Ely [2]	6,262	8	41	806.3	1,011.5	-----	68	30	55.2	+1.1	82	16	14	9	52	504	24	41	.47	−.6	.38	T	0	2	T	0	13.0	s.	56	s.	18	5	18	8	5.5	85
Reno [2]	4,527	20	52	860.1	1,013.2	+.3	68	36	48.8	+.9	86	15	21	1	53	403	32	51	1.25	−1.4	.47	5	2	T	0	9.3	w.	38	sw.	17	8	14	9	5.7	60
Winnemucca	4,339	5	56	864.9	1,011.9	−1.3	70	38	52.0	−.9	86	15	21	1	53	403	32	51	1.25	+.6	.47	5	2	T	0	8.5	sw.	29	sw.	7	3	15	13	5.5	51
Modena	5,473	10	46	830.3	1,008.8	+1.4	72	35	53.5	+.5	84	15	21	9	46	354	32	40	.26	−1.5	.22	4	2	T	0	9.9	se.	33	nw.	7	10	13	8	6.5	81
Salt Lake City [2]	4,357	32	58	863.9	1,010.2	+1.1	74	45	59.0	+3.3	90	16	28	3	43	234	32	40	.26	−1.5	.22	4	2	T	0	9.9	se.	33	nw.	7	10	13	8	5.4	68
Grand Junction [2]	4,602	5	26	856.8	1,009.8	−.4	78	49	63.8	+2.7	92	16	34	10	43	118	28	30	.22	−.6	.18	2	5	0	0	10.7	se.	45	s.	7	9	9	13	5.6	76
NORTHERN PLATEAU																																				
Baker [4]	3,471	36	54	893.3	1,013.9	−1.7	62	39	53.2	−1.1	85	27	27	25	38	449	38	67	3.23	+1.4	.38	15	3	.3	0	6.2	n.	20	nw.	18	2	10	19	7.2	--
Meacham [2]	4,056	7	28	874.7	1,014.9	-----	54	36	50.8	−.9	79	26	24	1	32	607	39	80	4.36	-----	.73	21	8	6.4	0	----	nw.	----	----	--	2	5	24	7.5	46
Boise [2]	2,739	5	49	916.7	1,011.5	−2.4	69	44	56.3	+.2	93	27	27	2	41	304	38	56	.91	−.5	.27	7	4	T	0	9.9	nw.	37	s.	27	6	8	17	8.2	--
Lewiston	1,436	4	23	962.1	1,013.5	-----	66	46	55.7	-----	93	27	32	2	36	310	46	73	4.80	-----	1.63	20	6	0	0	----	w.	----	----	--	2	9	20	6.7	63
Pocatello [2]	4,478	5	31	860.5	1,012.5	+.3	69	39	54.2	+1.2	86	16	25	5	43	343	33	48	.93	−.8	.49	8	5	1.0	0	10.2	sw.	33	w.	4	12	10	9	7.7	--
Ellensburg [2]	1,735	5	58	951.9	1,014.2	-----	64	41	52.3	−3.2	84	26	25	2	35	399	41	70	3.09	+2.5	1.14	15	4	T	0	----	nw.	----	----	--	3	15	13	5.3	72
Lacrosse	1,544	5	43	958.3	1,013.9	-----	65	43	54.2	-----	90	26	27	2	43	349	46	76	4.59	-----	1.52	16	4	0	0	----	sw.	----	----	--	2	9	20	6.7	54
Spokane [2]	1,929	6	51	944.8	1,013.9	−.7	62	44	52.8	−2.7	88	26	31	1	36	395	42	70	5.71	+4.3	1.67	16	2	T	0	7.6	sw.	26	sw.	3	2	9	20	7.6	--
Yakima [2]	1,076	4	54	974.6	1,013.5	−1.4	70	44	57.2	−1.0	91	26	26	2	39	263	42	62	2.76	+2.3	.76	12	4	0	0	----	nw.	----	----	--	2	12	17	7.9	54
NORTH PACIFIC COAST																																			7.2	--
Kelso [2]	750	38	76	----	----	----	----	----	53.7	−.5	83	24	33	1	38	354	46	75	4.12	+2.0	1.42	14	2	0	0	----	----	----	----	--	3	5	23	7.6	--
North Head	211	5	55	1,008.1	1,015.9	−2.7	56	47	53.6	-----	70	15	41	1	24	412	46	84	6.59	+3.6	2.63	19	0	0	0	15.0	nw.	54	s.	--	3	2	7	7.9	--
Seattle [4]	125	90	321	1,010.8	1,015.6	−2.0	62	48	51.6	+.7	81	24	40	2	29	313	46	76	4.67	+2.8	1.35	15	2	0	0	9.4	s.	36	sw.	12	4	9	18	7.9	38
Tacoma	194	172	201	1,008.5	1,015.2	−2.4	61	47	54.0	−.1	77	24	39	2	27	340	----	----	4.39	+2.3	1.13	17	3	0	0	7.9	n.	30	sw.	12	2	12	17	7.4	38
Tatoosh Island	86	5	61	1,012.2	1,015.2	−2.7	54	46	50.5	+.9	64	19	40	2	19	453	46	86	8.05	+4.0	1.69	19	3	0	0	13.0	s.	42	e.	15	3	8	20	7.2	32
Burns	4,162	35	47	870.6	1,012.9	-----	63	37	50.2	−.7	85	26	23	2	44	462	35	59	1.25	+.5	.54	9	2	.2	0	----	n.	----	----	--	3	7	20	7.5	33
Eugene [2]	433	4	35	1,000.3	1,016.3	-----	65	44	54.4	-----	80	23	32	1	38	328	47	78	3.25	-----	.80	17	3	0	0	----	s.	----	----	--	1	12	18	7.6	--
Medford [2]	1,329	29	58	967.8	1,015.6	−1.0	67	43	54.9	−3.3	87	23	33	4	45	316	42	68	1.63	+.5	.67	12	3	0	0	----	n.	----	----	--	4	5	22	7.7	--
Portland, Oreg. [4]	154	68	106	1,009.8	1,015.6	−2.0	65	49	57.2	+.3	85	24	41	1	29	253	46	73	3.88	+1.7	1.23	12	3	0	0	5.8	nw.	23	sw.	2	4	6	21	7.6	--
Roseburg	510	45	76	998.0	1,016.9	−1.1	66	45	55.6	−.4	87	23	33	1	40	298	45	70	2.30	+.4	.48	18	0	0	0	4.8	nw.	21	sw.	3	1	7	23	7.8	47
																																			7.9	39

See footnotes at end of table.

CLIMATOLOGICAL DATA FOR WEATHER BUREAU STATIONS FOR MAY 1948—Continued

District and station	Elevation of instruments: Barometer above sea level [1]	Elevation of instruments: Thermometer above ground	Elevation of instruments: Anemometer above ground	Pressure: Station	Pressure: Sea level	Pressure: Departure from normal	Temperature of the air: Averages: Mean maximum	Mean minimum	Mean	Departure from normal	Temperature of the air: Extremes: Highest	Date	Lowest	Date	Greatest daily range	Total heating degree days	Mean temperature of the dew point	Mean relative humidity	Precipitation: Total	Departure from normal	Greatest in 24 hours	Days with 0.01 inch or more	Days with thunderstorms	Total snowfall (unmelted)	Snow, sleet, and ice on ground at end of month	Wind: Average hourly speed	Prevailing direction	Maximum velocity: Miles per hour	Direction	Date	Character of day (sunrise to sunset), number of days: Clear	Partly cloudy	Cloudy	Average cloudiness, tenths (sunrise to sunset)	Possible sunshine
MIDDLE PACIFIC COAST	*Ft.*	*Ft.*	*Ft.*	*Mb.*	*Mb.*	*Mb.*	°F.	°F.	°F.	°F.	°F.		°F.		°F.		°F.	%	*In.*	*In.*	*In.*			*In.*	*In.*	*m. p.h.*					*0-3*	*4-7*	*8-10*	*0-10*	%
Eureka	60	72	88	1,016.6	1,019.0	.0	57	47	57.6 52.0	−2.0 .0	65	15	39	1	21	398	47	72 82	1.88 2.16	+.8 +.4	.53	12	0	0	0	7.9	n.	35	nw.	18	1	9	21	5.9 7.8	46
Red Bluff [2]	353	5	26	1,001.7	1,014.2	.....	73	50	61.7	−4.6	88	5	38	8	34	134	46	60	1.79	+.7	.67	11	3	0	0	7.3	nw.	34	w.	7	5	9	17	6.5	67
Sacramento [4]	66	92	115	1,012.5	1,015.2	+1.7	73	49	61.0	−2.3	85	23	42	1	32	144	47	69	3.04	+2.3	1.93	6	0	0	0	7.0	s.	18	w.	7	6	7	8	4.4	71
San Francisco [4]	155	112	132	1,011.5	1,017.3	+1.7	61	50	55.6	−1.2	70	15	47	1	17	293	47	78	.54	−.3	.36	4	1	0	0	10.7	w.	28	w.	10	13	7	11	5.0	58
SOUTH PACIFIC COAST																																				
Fresno [2]	327	5	34	1,002.4	1,014.2	+1.0	80	51	63.8 65.2	+.3 −2.0	92	16	43	9	40	67	44	63 52	.32 .96	−.1 +.5	.46	4	1	0	0	9.1	nw.	30	nw.	17	18	8	5	4.2 3.6	87
Los Angeles	338	236	263	1,001.7	1,013.9	−.3	74	54	63.9	+1.7	87	15	47	20	29	75	50	66	T	−.4	T	0	0	0	0	6.3	w.	24	w.	18	18	6	7	4.0	76
San Diego [2]	87	20	55	1,011.2	1,014.2	+1.0	70	55	62.4	+1.1	81	4	49	21	26	84	52	70	.01	−.3	.01	1	0	0	0	7.5	sw.	24	w.	18	12	13	6	4.9	64
PANAMA CANAL																																				
Balboa Heights [6]	118	5	97	.....	1,009.5	.....	89	75	82.0	+1.1	96	15	71	8	20	0	75	85	5.17	−2.6	.....	21	9	0	0	6.2	nw.	24	s.	31	0	9	22	8.1	..
Cristobal [6]	27	37	92	.....	1,010.0	.....	85	77	81.0	−.4	88	21	75	30	13	0	75	84	7.29	−5.1	.....	18	5	0	0	8.6	ne.	24	s.	22	0	10	21	7.4	..
ALASKA																																				
Anchorage [3]	132	6	44	1,007.1	1,012.2	.....	56	36	46.2	+1.2	67	13	25	3	34	585	32	62	.03	−.5	.02	2	0	.0	.0	6.4	nw.	28	se.	18	1	6	24	8.1	..
Annette Island	113	5	53	1,009.5	1,013.5	.....	57	45	50.7	+.2	70	27	34	1	25	445	44	80	2.25	−1.9	.39	18	0	.0	.0	.....	se.	...	.....	...	2	4	25	8.1	..
Barrow	29	5	27	1,020.7	1,021.0	.....	21	9	14.8	−4.6	32	28	−15	3	24	1551	14	94	.04	−.1	.03	2	0	.4	19.7	10.9	e.	26	.....	30	2	5	24	8.2	..
Bethel [2]	28	5	31	1,010.2	1,011.5	.....	50	32	40.8	+.4	63	25	19	5	27	755	34	80	.89	.0	.24	12	0	1.0	.0	8.0	nw.	...	.....	...	2	13	16	7.5	..
Cordova [3]	45	5	32	1,010.8	1,012.5	.....	54	34	44.2	+.4	68	13	24	5	37	645	40	85	4.14	−2.8	1.72	20	0	.0	.0	.....	se.	28	se.	18	2	8	21	7.8	..
Fairbanks [3]	455	5	63	994.9	1,012.2	.....	58	34	45.8	−1.1	72	25	16	4	31	593	42	74	1.39	+1.1	.60	7	1	1.0	.0	7.2	nw.	24	e.	18	5	13	13	6.2	..
Galena	139	4	66	1,006.1	1,010.8	.....	52	32	42.4	−.3	70	25	9	3	27	699	30	62	.51	−.8	.16	7	1	T	.0	.....	n.	35	n.	2	4	13	14	6.5	..
Gambell	32	5	32	1,014.2	1,015.2	.....	32	25	28.6	−1.1	42	20	14	5	16	1128	27	90	.02	−.5	.....	2	.....	.1	.3	14.0	ne.	34	se.	21	3	4	24	8.0	..
Juneau [3]	80	6	30	1,012.5	1,013.5	.....	57	39	48.0	−.6	70	13	28	4	31	528	39	70	4.39	+1.6	1.39	17	0	.0	.0	6.3	n.	24	se.	18	1	7	23	8.0	..
Kotzebue [3]	20	5	31	1,014.2	1,014.9	.....	34	17	25.1	−4.7	45	21	−8	1	29	1239	22	88	.17	−.1	.08	4	0	1.7	6.6	6.8	ne.	26	se.	7	10	11	10	4.9	..
McGrath [3]	341	5	31	999.0	1,011.9	.....	53	32	42.4	−1.3	69	25	8	4	32	703	32	66	.39	−.7	.09	10	0	T	.0	.....	n.	22	e.	18	1	8	22	7.6	..
Nome [3]	22	10	75	1,012.9	1,013.5	.....	40	25	32.4	−1.7	54	25	2	3	30	1013	28	84	.85	+.2	.70	3	0	1.5	T	9.1	n.	34	e.	7	7	9	15	6.5	..
Northway [3]	1,718	5	32	948.9	1,011.9	.....	58	34	46.2	+.3	72	27	21	4	32	582	32	62	.74	.0	.29	4	2	T	.0	4.1	w.	23	e.	24	0	11	20	7.5	..
HAWAII																																				
Honolulu [4]	38	86	98	1,016.6	1,018.0	.....	80	71	75.6	+.8	82	2	68	1	12	0	64	69	.53	−1.2	.19	12	1	0	0	10.1	e.	26	e.	8	7	21	3	5.0	73

[1] Height of barometer cistern above mean sea level on January 1, 1900, or when station was first established since January 1, 1900. When station is moved to new location or airport, the pressure is reduced to the original elevation for homogeneity. These elevations do not represent the present station elevation in most cases.

[2] Data are from airport records. Pressures adjusted to original elevations according to note 1.

[3] Barometric, hygrometric, wind, character of day, and average cloudiness data from airport records; remainder from city office records.

[4] Barometric and hygrometric data from airport records; remainder from city office records.

[5] Barometric, temperature, degree day, and hygrometric data from airport; remainder from city office records.

[6] Bihourly hygrometric data.

NOTE.—Unless otherwise indicated, data in table are city office records.

SEVERE LOCAL STORMS FOR MAY 1948

[The table hereunder contains such data as have been received concerning severe local storms that occurred during the month. A revised list will appear in the United States Meteorological Yearbook]

Place	Date	Time	Width of path, yards	Loss of life	Value of property destroyed	Character of storm	Remarks
Reno, Sedgwick, and Harvey Counties, Kans.	1	3:50–5 p. m.	[1] 1½–3½	0	$60,000	Tornado, hail, and wind.	Violent winds began 8 miles northwest of Mount Hope, near Haven. Tornado apparently formed a short distance west of Bentley; path 38 miles long; ended east of Walton at about 4:30 p. m. Vortex cloud plainly visible. Damage mostly to rural property. Hail damage to crops, $10,000.
Chase County, Kans.	1	5–5:30 p. m.	[1] 26	0	25,000	Tornado and wind.	Tornado, which occurred in area of violent winds, apparently formed 13 miles south of Clements, near the origin of tornado 1 week previous, and ended near Plymouth. Damage to rural property. Storm path 35 miles long.
Douglas County, Kans.	1	Afternoon	.....	.....	5,000	Hail	Occurred over most of county.
Miami County, Kans.	1	6–7:30 p. m.	[1] 5	.....	30,000	do	Occurred in eastern part of county. Path 10 miles long. Some hailstones as large as hens' eggs. Loss to crops.
Osage and Shawnee Counties, Kans.	1	6–8:30 p. m.	.....	0	145,000	Tornado, hail, and wind.	General wind storm, especially severe in Scranton and Burlingame area. Many barns and sheds damaged or demolished. A tornado accompanied wind storm in path ½ mile north of Overbrook to ¾ mile east. Vortex cloud did not quite reach ground. Light to moderate hail over much of wind-damaged area.
Neosho County, Kans.	1	6:25–7:30 p. m.	100–1,760	2	500,000	Tornado	Originated south of Thayer. Path 25 miles long. Passed north of Erie and ended southeast of Stark. Several vortex clouds sighted, some almost a mile from main cloud. Buildings on more than 60 farms badly damaged or completely destroyed. At least 14 families left homeless. 5 persons injured.
Boone County, Mo.	1	7:20 p. m.	.....	.....	2,500	Wind	Storm from southwest struck Columbia and vicinity. Many trees and chimneys damaged; power and telephone lines broken.
Miller County, Mo.	1	9:10 p. m.	[1] 12	.....	25,000	do	Storm from west damaged many sign boards, power and communication lines and some buildings in Eldon and vicinity. Slight damage to crops and gardens. 3 drowned when boat capsized about 3 miles above Bagnell Dam. Path 15 miles long.

See footnote at end of table

SEVERE LOCAL STORMS FOR MAY 1948—Continued

[The table hereunder contains such data as have been received concerning severe local storms that occurred during the month. A revised list will appear in the United States Meteorological Yearbook]

Place	Date	Time	Width of path, yards	Loss of life	Value of property destroyed	Character of storm	Remarks
Rogers, Craig, and Delaware Counties, Okla.	1	9:15–10:15 p. m.	50–100	4	300,000	Tornado, wind and hail.	Path 35 miles long. 200 injured, 15 seriously. Tornado damage estimated at $250,000, hail damage at $40,000, and wind damage at $10,000. Tornado moved in easterly direction. More than 60 homes damaged or destroyed. High winds and hail reported in areas on both sides of tornado path. The following towns reported damage: Vinita, Grove, Pensacola, Afton, and Dennis. 4 persons killed by tornado. 1 person electrocuted when repairing power lines.
Cole County, Mo.	1	9:35 p. m.	440	0	500,000	Tornado	Storm from west, path ½ mile long in St. Thomas and vicinity. Some livestock and poultry killed; several homes completely unroofed, and nearly all homes, in town of 200 people, damaged. Only slight crop damage. 2 persons injured.
Cooper County, Mo.	1	Between 10 and 11 p. m.	¹3			Hail	Storm near Wooldridge moved eastward in path 7 miles long. Pastures, gardens, fruit trees, oats and wheat damaged considerably. Some wildlife killed.
Callaway County, Mo.	1	10:30 p. m.			5,000	Wind	Storm from southwest, in and around Fulton, damaged or demolished several barns and other outbuildings; some poultry killed.
St. Louis County and St. Louis City, Mo.	1	11:28–11:40 p. m.			300,000	do	Storms from southwest; also struck East St. Louis, Granite City, and Monsanto, Ill. Damage in city of St. Louis estimated at $100,000. Winds estimated at 75 miles per hour. Many houses and apartment buildings unroofed; at least 9 persons slightly injured, mostly by flying glass. Power and telephone wires and many trees broken. Some automobiles damaged by falling trees and other objects.
Franklin County, Mo.	1	11:30 p. m.	125			do	Storm from west, path 1¼ miles long, damaged trees in Missouri Botanical Gardens at Gray Summit.
Woods County, Okla.	1				4,000	Electrical	Lightning struck and burned farm home 7 miles northwest of Farry.
East St. Louis, Monsanto, and Granite City, Ill., and vicinity.	2	12:30–1 a. m.		1	200,000	Wind	1 person electrocuted at Granite City by power line blown down. Winds up to 75 miles per hour caused considerable damage to buildings, windows, and automobiles. Greatest property loss was at Monsanto, where a precast concrete roof blew off chemical company building and costly equipment damaged. Many trees uprooted by high wind. 4 persons reported injured. Storm also hit St. Louis, Mo.
Thomas County, Kans.	2	Early morning.	¹6		150,000	Hail	In eastern part of county. Path 30 miles long. Damage mostly to crops.
Chester, S. C.	2	3 p. m.			2,000	Wind and hail	Several roofs and many trees damaged.
Salisbury, N. C.	2	3–3:10 p. m.	500		25,000	do	Wind estimated at 60 to 80 m. p. h. $12,000 damage to planes at Salisbury airport. Damage to buildings, trees, and crops estimated at $13,000.
Desoto, Ind., to Mercer County, Ohio.	2	4 p. m.	880	0	160,000	Tornado	Storm moved northeastward. 3 funnels reported. Worst damage in Ridgeville, Ind.
Darke County, Ohio	2	4:45 p. m.	¹1	0	350,000	do	Moved northeastward in path 15 to 20 miles long from Palestine to a point north of Greenville. Numerous barns and houses damaged; much poultry and some cattle killed.
Miami and Champaign Counties, Ohio.	2	5 p. m.			1,000,000	Wind	Some farm homes and barns totally destroyed and others damaged. 3 persons injured; 25 head of cattle killed.
Athens County, Ohio	2	6 p. m.	880	0		Tornado and hail	Moved northeastward in path 15 to 20 miles long. Many barns and houses damaged by wind; hail broke windows and damaged roofs and sidings of houses.
Mercer County, Ohio	2	Afternoon		0		Tornado	Apparently originated in Indiana and moved to point south of Fort Recovery, Ohio. Apparently very little damage in Ohio.
Cheyenne and Rawlins Counties, Kans.	2	6–7:30 p. m.	¹¼–4		200,000	Hail	Originated in Colorado. Path 70 miles long. Accumulation of hailstones several inches deep in some places. Damage mostly to wheat.
Wayne and Clinton Counties, Ky.	2	7–8 p. m.	300	5	200,000	Tornado	A church and several residences of Aplha, Ky., demolished. Crops, livestock, farm buildings and equipment in path about 10 miles long destroyed.
Northern Jackson County and Southeast Banks County, Ga.	2	7–8 p. m.			100,000	Hail	Hail, as large as golf balls in some areas, with heaviest at and around Commerce. Affected area probably 100 square miles. Losses to small grain and especially to peaches amounted to about $50,000. Many window panes broken and much damage to house roofs.
Doddridge and Harrison Counties, W. Va.	2	8:30–9:30 p. m.	34–100	4	250,000	Tornado, electrical, hail, and rain.	Storm traveled from Big Isaac in Doddridge County via Buffalo Creek, West Milford, Highland Dam Section on West Fork River, and Mount Clare to Quiet Dell in Harrison County. 75 to 80 persons injured; 3 homes burned by lightning; 35 homes, 1 church and a number of farm buildings destroyed by wind. Lesser damage to many more buildings. Hailstones reported as large as 8 inches in circumference; apparently several stones fused together after falling.
Jackson County, Ohio	2					Hail	Early fruits damaged 25 percent.
Baltimore, Md.	3	A. m.				Electrical and wind	Lightning struck church steeple causing slight damage, also a home setting fire to crib in which a baby was sleeping. Phone lines at Sparrows Point disrupted.
Murray, Johnston, and Atoka Counties, Okla.	3	12:30–3:10 p. m	600–880	0	291,000	Tornado and hail	Path 55 miles long in a southeast direction. 3 persons injured, 2 in Johnston County and 1 in Atoka County. Much of path was over thinly populated ranch country. Most of hail damage reported from Atoka County where path was about 8 miles wide. Hail over 2½ inches in diameter. Damage by tornado, $166,000; by hail, $125,000.
Nocona, Montague County, Tex.	3	1:50 p. m.	100	0	1,000	Tornado and hail	Light hail caused no damage. 1 country home destroyed.
Bridgeport, Wise County, Tex.	3	2 p. m.	¹3		25,000	Hail and wind	Wind damage of $2,500 to property. Hail damage to crops, $5,000; to property, $17,500.
Washington County, Okla.	3	2:30 p. m.	¹1		25,000	do	Storm moved eastward for about 3 miles through Rice Creek and Fish Creek vicinities, 4 miles south and southwest of Bartlesville. Hail ½ to 1½ inches in diameter. Hail damage $24,000 to crops, $500 to roofs. Wind damage $500 to trees.
McKinney, Collin County, Tex.	3	2:59 p. m.	587	3	2,000,000	Tornado, hail and wind.	43 persons injured. Over 300 homes and buildings damaged; no damage from hail; heaviest damage to Texas Textile Mill and school building.
Choctaw County, Okla.	3	Afternoon			10,000	Electrical and wind	Church steeple struck and burned. Several barns in western Choctaw County unroofed. Sone damage to windows, etc. in Hugo.
McCurtain County, Okla.	3	do			8,000	do	High winds caused $1,000 damage. $7,000 loss by lightning. Damage in Idabel, Holly Creek, and Redlow communities.
Columbia, S. C.	3	9:35 p, m.			1,000	Wind	Damage mostly to structures.
Mayes, Craig, and Delaware Counties, Okla.	3					Hail	Considerable damage to gardens, crops, and fruit trees in Pensacola, Grove, and Vinita communities.
Dallas County, Ala.	4	10:15 a. m.			5,000	Thunderstorm	Buildings unroofed and trees uprooted near Selma.
Autauga County, Ala.	4	10:30 a. m.		1	10,000	do	A church, being used as a school, demolished near Prattville; a child killed, and 2 teachers and 13 pupils injured.
Montgomery, Ala.	4	10:35 a. m.			30,000	do	Tile roof, windows and 11 airplanes damaged at Maxwell Field. Other miscellaneous building and tree damage in north Montgomery. 5 persons injured.
Lee County, Ala.	4	11 a. m.			5,000	do	Trees blown down, plate glass windows broken, and electric and telephone service interrupted at Opelika.
Colorado Springs, Colo., 22 miles south of.	4	a. m.		1	200	Dry squall	A child killed and 2 children seriously injured when an old barn was blown over on them.

See footnote at end of table

SEVERE LOCAL STORMS FOR MAY 1948—Continued

[The table hereunder contains such data as have been received concerning severe local storms that occurred during the month. A revised list will appear in the United States Meteorological Yearbook]

Place	Date	Time	Width of path, yards	Loss of life	Value of property destroyed	Character of storm	Remarks
Greensboro, Ga., near	4	1:52 p. m.	100–150	0	10,500	Tornado	Storm moved east-northeastward over 11-mile path, striking first 8 miles west of Greensboro. A home totally destroyed and another heavily damaged; a large barn unroofed and otherwise damaged; a concrete building on dairy farm badly cracked. Much damage to timber, but crop losses very little.
Dougherty County, Ga., southern portion.	4	2:30–3:20 p. m.			1,615	Electrical	High winds and hail caused little damage. Lightning set fire to a large barn, causing complete loss, including considerable feedstuff, 1 horse and some adjacent property.
Albany, Ga., near	4	2:35 p. m.	100	0	700	Tornado	Storm from south struck first about 3 miles east of Albany, destroying a 3-car garage and damaging numerous trees; communication and power services disrupted, a large transformer put out of service, and a large chicken brooder destroyed. Moderate hail accompanied storm, but very little damage. The storm lifted after traveling along ground for about 4 miles.
Augusta, Ga	4	2:43–4:15 p. m.	City-wide		500	Electrical and wind	Some trees and power and telephone lines blown down. 1 man killed through contact with "live" wire.
Columbia, S. C	4	5 p. m.			6,000	do	Fire from lightning caused most of damage, but a few structures and trees damaged by wind.
Washington County, Okla	5	4 p. m.	1 5–10			Hail and wind	Considerable damage to gardens, flowers, car tops, and roofs in Bartlesville.
Okfuskee County, Okla	5	4:15 p. m.	1 5		34,000	Wind and hail	Struck Okemah. $10,000 damage to crops by hail. Hail 2 inches in diameter.
Charleston, S. C	5	5:30 p. m.		1	100,000	Wind	A sudden squall of extremely high wind near the municipal airport wrecked hangar and damaged 25 planes.
Pittsburgh County, Okla	5	6:15 p. m.	100–880	0	45,000	Tornado	Storm through Blocker for about 4 miles east. Accompanied by some small hail. Debris in all directions. Many houses unroofed. 5 dwellings blown down. 1 person injured.
Conway County, Ark	5	7:30 p. m.		1		Electrical	1 boy killed by lightning at Robertstown.
Knight Ranch, McCullough County, Tex.	5			0	50,000	Tornado	25 miles northeast of Brady, near Mercury. 2 houses and a barn blown away. Damage to livestock and farm equipment.
Montgomery, Ala	6	6 a. m.			50,000	Thunderstorm	At Dannelly Field, 2 small planes destroyed and a third damaged. A farmhouse demolished 8 miles south of town. Many dwellings and trees damaged in scattered parts of city and vicinity.
Butler County, Ala	6	Early morning			15,000	do	Near Glasgow community, 3 tenant houses destroyed and 1 man injured slightly.
Clarke County, Ala	6	do			15,000	do	A planing mill unroofed and several flimsy frame houses blown down at Jackson.
Mobile, Ala	6	do			2,000	do	At Municipal Airport, 2 small buildings unroofed, administration building and control tower damaged, and wing of small plane smashed. Some damage to resort area on eastern shore of Mobile Bay.
Dallas County, Ala	6	do			20,000	do	Trees and buildings damaged in scattered sections of Selma and vicinity.
Rusk, Cherokee County, Tex.	6	11:30 p. m.	1 6		25,000	Hail and wind	Wind damage $2,500 to property. Hail damage to crops, $15,000; to property, $7,500.
Southern Mono and northern Inyo Counties, Calif.	7	5:30 a. m.–3:30 p. m.			40,000	Wind	Damage between Bishop and Leevining. A few cabins and other small buildings destroyed or damaged. Numerous large pine trees felled. Roofs, signs, windows, and chimneys damaged extensively. A water tank blown over. 3 power line towers fell, disrupting electric service.
Milwaukee, Wis	9	Evening			1,500	Electrical	Lightning fire damaged house; 2 chimneys struck and damaged.
Webster County, Mo	10	2 a. m.		0	5,000	Tornado	Probably a small tornado hit southern part of Marshfield, where several houses damaged, some trees uprooted, and some telephone and power lines broken.
Pulaski County, Mo	10	2:30 a. m.	100		1,000	Wind	Some trees blown down and several barns, machine sheds, and outbuildings damaged at and near Crocker.
Laclede and Texas Counties, Mo.	10	11:50 a. m.	50		1,000	do	Storm from southwest. Path 8 miles long. Damaged several barns and other outbuildings; some trees uprooted. Most damage between Lynchburg and Eveningshade.
Possum Kingdom Dam, Palo Pinto County, Tex.	10	11:45 a. m.	440		1,800	Hail	Principal damage to roofs.
Kenosha, Wis	10	a. m.			5,000	Wind	Harbor wharf damaged by 5-foot swell from Lake Michigan.
St. Joseph and Elkhart Counties, Ohio.	10	4:45 p. m.	440	0	20,000	Tornado	Storm moved eastward, south of Mishawaka, damaging airport. Some damage in Elkhart.
Mason, Mason County, Tex.	10	7:15 p. m.	1 3		2,000	Hail	Principal damage to crops.
Curry County, N. Mex	10	7:30 p. m.				do	Considerable damage to gardens and flowers; only slight damage to field crops.
Saline County, Mo	10		1 1			do	Storm from west. Path 2¼ miles long. Damaged early gardens considerably in Sweet Springs and surrounding areas.
Thornton, Limestone County, Tex.	11	9:15 a. m.	220			Wind and hail	2 garages, tractor, and car damaged. Light hail caused no damage.
Altmar, N. Y	12	Early a. m.				Wind	2 silos blown down, a barn unroofed, private garage overturned, trees uprooted, and communication and power lines broken.
Greenville, Hunt County, Tex.	12	6 p. m.	880			Tornado, electrical and hail.	Small tornado struck on Greenville-Terrell highway, 3 miles south of Greenville. Heavy loss to barns, homes, and outbuildings.
Madison, Minn., vicinity of.	14	7–7:30 p. m.	1 2	1	68,000	Thunderstorm	2 barns and a number of outbuildings demolished; farm houses damaged; some livestock perished; trees uprooted; portion of new building under construction blown over.
Grady County, Okla	15	After 9 p. m.	1 ¼–1	0	18,000	Tornado and hail	Storm 2 miles long between Anadarko and Verden. No injuries, 3 farmsteads damaged or destroyed. Damage $1,000 to crops; $2,000 to livestock; $15,000 to buildings.
Washington and Benton Counties, Ark.	15	9:30 p. m.	1 3		50,000	Hail	Hail up to ½ inch in diameter, covered large area extending from the Fayetteville Agricultural Experiment Station northward into Missouri. Heaviest damage in vicinity of experiment station, mostly to fruits and vegetables, with some grain damaged.
Stone County, Mo	15		1 1		1,000	do	Most damage to strawberries and gardens at Lampe and vicinity. Path 10 miles long.
Dodge County, Nebr	15					do	Alfalfa damaged slightly; some truck gardens and crops destroyed; glass in greenhouses broken in Fremont.
Salisbury, Md	17	A. m.			35,000	Wind and floods	Early spring crops suffered damage from local flash floods. Considerable damage by winds to trees and buildings.
Calvert County, Md	17	A. m.				Electrical and wind	A home on Island Rock, burned by lightning; damage estimated at $8,000. A tobacco barn at Lusby, blown down. Trees blown down, 1 falling on home, doing considerable damage.
South Plainfield, New Market and Bound Brook, N. J.	17	3–3:30 p. m.			50,000	Hail	Severe thunderstorm with heavy hail; hailstones up to 2 inches in diameter. Principal damage to small plants, particularly spinach crop. 14 planes damaged somewhat at Hadley Airport, South Plainfield. Considerable damage to glass, especially greenhouses. Electric signs and automobile roofs damaged. Local residents reported storm most severe in 50 years.
Garden County, Nebr	17					Wind	Wind demolished hangars and 2 planes, causing losses of about $8,000. at Oshkosh Airport. Some damage to crops and a few farm buildings.
Sandpoint, Idaho	19	2:30–10 a. m.			12,000	Wind	Stiff northeast wind coupled with high water on Lake Pend Oreille damaged older boathouses and sank several boats.

See footnote at end of table

SEVERE LOCAL STORMS FOR MAY 1948—Continued

[The table hereunder contains such data as have been received concerning severe local storms that occurred during the month. A revised list will appear in the United States Meteorological Yearbook]

Place	Date	Time	Width of path, yards	Loss of life	Value of property destroyed	Character of storm	Remarks
Sante Fe, N. Mex.	19	1:30 p. m.			600	Hail and rain	Estimated $100 damage to local gardens and fruit, $500 to buildings Latter damage due to flooding from heavy rains.
Billings, Mont.	19	7:50 p. m.				Thunderstorm and rain.	Storm accompanied by light small hail occurred at 5:30 p. m. Precipitation measured 0.44 for a 5-minute period. Frequent power failures and interrupted telephone service.
Big Bend County, Wash.	19					Thunderstorm and wind.	Very severe locally, causing considerable soil erosion and damage to communication lines.
Athens, Wis.	20	2:30 p. m.		1		Electrical	Lightning struck wire fence, killing farmer.
Seeley Lake, Mont.	20	3:30–3:53 p. m.				Thunderstorm and hail.	Hail 1½ to 2¾ inches, broke limbs of trees, dented hoods and tops of cars.
Tomah, Wis.	20	4:30 p. m.			35,000	Line squall	7 airplanes and a hangar wrecked.
Billings, Mont.	20	5:45 p. m.		0		Tornado	A tornado funnel sighted for about 20 minutes over hills 35 miles south-southwest of station. Funnel extended and retracted quite rapidly, reached ground for a time early in its development.
Flatwillow, Mont.	20					Wind and hail	Strong wind destroyed 2 ranch buildings. Considerable hail damage southwest of Flatwillow.
Platte County, Wyo.	21	6–8 p. m.	[1] 1½	2	100,000	Hail and rain	Storm occurred near Wheatland from approximately 3 miles west-northwest of city to approximately 3 miles south. Rainfall reported amounting to 3 and 4 inches within 2-hour period. Some hail 1 inch in diameter. Hail damaged crops and buildings but most damage caused by floods and erosion. Approaches to some highway bridges washed out. Part of Colorado and Southern Railway track washed out, causing train wreck and death of 2 railway employees.
Richmond County, Va.	21	8:30–9:30 p. m.	880		100,000	Hail	Haynesville Village area to the Bay. Heavy damage to corn; small grains and tomatoes totally destroyed.
Northumberland County, Va.	21	9–9:30 p. m.	[1] 1–1½		77,000	do	Upper edge of county to Ophelia. Small grains and tomatoes totally destroyed; damage to corn slight; damage to buildings moderate.
Broadwater County, Mont.	21			0		Tornado and electrical.	Tornado high over bench. Stopped field work for short time. Lightning set brush fire along Missouri River.
Sun River, Mont.	21–22					Hail and electrical	Hail shredded leaves of some vegetation. 1 house struck by lightning, burned.
Cottonwood, Idaho	22	1 a. m.—12 noon.			15,000	Rain	Damage on ten-square mile area surrounding Cottonwood due to erosion and flooding. Some damage, amount not estimated, to highways by landslides and debris.
Kingman County, Kans.	22	7:30 p. m.	[1] 4		728,000	Hail	Path 25 miles long extended from near Penalosa to Harper County line, including Zenda and Nashville. Damage chiefly to wheat.
Harper, Kingman, and Sedgwick Counties, Kans.	22	8–9 p. m.	[1] 2–4		125,000	Hail and wind	Path 40 miles long extended from near Attica and Zenda to near Cheney. Damage mostly to wheat.
Hinsdale, Mont.	22					Wind	Power line poles felled and small buildings unroofed.
Lea County, N. Mex.	23	Afternoon		0		Tornado	Small tornado reported over range land.
Grant County, Okla.	23 and 24	About 9 p. m. each day.	[1] 6		18,000	Hail	2 storms near Jefferson and Medford on successive days, covering approximately same area. Paths about 15 miles long. About 11½ percent destruction to wheat. $13,000 damage to wheat, $5,000 to roofs, glass, and cars.
Rockingham County, Va.	24	3:30–4:30 p. m.	880		51,000	do	West of Timberville and from Weyers Cave to Port Republic. Damage heaviest in Timber Ridge section; considerable damage in peach and apple section west of Timberville; small grain in Timber Ridge section completely ruined; damage lessened as storm continued eastward; a second peak damage area around Mount Crawford.
Culpepper County, Va.	24	5:45–6:45 p. m.	[1] 1		7,000	do	Between Callaway and Dillon's Mill. Barley reduced 50 percent; oats, 75 percent; corn partly defoliated.
Franklin County, Va.	24	Late afternoon.	[1] 1–2½			do	Apples damaged considerably.
Tigerville, S. C.	25	3 p. m.			5,000	Winds	Several houses unroofed, a few barns damaged and some trees blown down.
Tillman County, Okla., vicinity of Frederick.	25	4:15–5 p. m.	[1] 2		40,000	Hail	Hail area 15 miles long, with a total destruction of crops on about 1,500 acres All damage to wheat which was nearly ripe.
Cut Bank, Mont.	26	2:30 p. m.	[1] 18			do	Very heavy hail with drifts in roads to depth of 6 inches. Some crop damage.
Schulenburg, Fayette County, Tex.	26	9 p. m.				Wind and hail	7 miles north of Schulenburg in Swiss Alps section. Trees uprooted; some buildings damaged; cotton, corn and gardens damaged.
New Holland Community, S. C.	26	During day			3,000	do	Wind caused 1 injury and wrecked barn and stables.
Greenville, S. C.	26	During night			750,000	Rain	Excessively heavy rain in northern Greenville county caused damage to crops and considerable soil erosion.
Northern Wasco and Umatilla Counties, Oreg.	27	Late afternoon and evening.			5,000	Thunderstorm, hail and rain.	Considerable wheat and some fruit damaged.
Twin Falls County, Idaho.	27	Evening		2		Electrical	2 farmers killed by lightning; 1 near Twin Falls, the other near Filer.
Jacksonville, Fla. and vicinity.	28	4:15–4:45 p. m.			2,000	Electrical, wind, and hail.	Wind damage to roofs and a motor court, with some light poles blown down; 25 transformers knocked out by lightning. Damage from hail negligible.

See footnote at end of table

SEVERE LOCAL STORMS FOR MAY 1948—Continued

[The table hereunder contains such data as were received concerning severe local storms that occurred during the month. A revised list will appear in the United States Meteorological Yearbook]

Place	Date	Time	Width of path, yards	Loss of life	Value of property destroyed	Character of storm	Remarks
Kit Carson, Colo.	28	6:15 p. m.			1,000	Hail and rain	Hail 2 miles west of Kit Carson accumulated to depth of 1 foot while heavy rains caused flooding of most basements in Kit Carson.
Burke County, Ga., middle and southwest portions.	29	8:30 a. m. to 3 p. m.			20,000	Hail	Hail, ¾ to 1½ inches in diameter, affected area from Midville to Waynesboro. Some cotton fields totally destroyed.
Laramie County, Wyo.	29	2:30 p. m.	100	0	10,000	Tornado	Storm destroyed farm buildings about 10 miles north of Cheyenne.
Lamesa, Dawson County, Tex.	29	7:10 p. m.	[1] 10	0	500,000	Tornado, hail, and wind.	Heavy hail damage, mostly to crops, $250,000; wind damage, $150,000 to buildings; tornado, $100,000 to airplane hangar.
Saline County, Kans.	30	5-6 a. m.			150,000	Wind	Damage at Smoky Hill Airfield, 2 miles south of Salina, where wind reached velocity of 82 m. p. h. at 5:12 a. m. Several military planes damaged.
Denver, Aurora, Welby, and Adams City, Colo.	30	4-8 p. m.	[1] 10	1	4,000,000	Electrical, hail, flood	Lightning killed 1 worker in field about 3 miles east of Aurora. Heavy rain and hail caused complete crop loss and heavy property damage in Welby district. Heavy loss to automobiles, highways, buildings, and crops in Adams City, Aurora, and Denver areas. Flood loss alone in Sand Creek basin reported as $185,000.
Florence-Portland area, Colo	30	4:20-9 p. m.	[1] 6		500,000	Hail	Heavy hail caused 75 to 100 percent crop loss, damaged automobiles, buildings and broke windows; 90 percent of flat roofs in Florence had to be replaced or repaired. $10,000 loss to 1 rancher as a band of sheep drowned when caught in flood waters of an otherwise dry gulch.
Colorado Springs, Colo.	30	6:07-7:30 p. m.	[1] 1		150,000	Rain	Excessive rain caused flooding of large areas of eastern portion of city; homes flooded, roads and bridges undermined, and power facilities disrupted.
Mountain Park, N. Mex., and south in Fresnal and LaLuz canyons. Also central Union County, N. Mex.	30	Afternoon			4,500	Hail	Several storms reported, damage principally to crops.
Wauneta, Nebr.	30	Evening				do	Some damage to roofs.
Mayhill, N. Mex., and vicinity.	31	1 p. m.			3,000	do	Most of damage to local gardens and truck crops.
Torrance County, N. Mex.	31	1 p. m.				do	Unusually large stones, reported up to 2½ inches in diameter. Considerable damage to roofs. Chickens killed and livestock injured.
Lewis and Idaho Counties, Idaho.	31	Afternoon				Rain and hail	Hailstorm and cloudburst in Lawyer's Canyon district near Cottonwood and over portion of Nezperce prairie. Heavy erosion with landslides covering North-South Highway; hail damage to crops not heavy.
Carlsbad, N. Mex., and vicinity.	31	6 p. m.		2	31,500	Hail and rain	Hail damage light; most damage caused by inundation. Railroad tracks washed out and train wrecked, causing death of 2 trainmen and injury to 3 others.
Colfax and Union Counties, N. Mex.	31	9 p. m.		1	50,000	do	Scattered hail damage throughout both counties. Automobile caught in flashflood, driver drowned.
Picacho, N. Mex., and vicinity.	31	P. m.			6,000	do	Several head of sheep killed and extensive damage to water tanks, canals, and roads.

[1] Miles instead of yards.

LATE STORM REPORTS FOR APRIL, 1948

[The table hereunder contains such data as has been received concerning severe local storms that occurred during the month. A revised list will appear in the United States Meteorological Yearbook]

Place	Date	Time	Width of path, yards	Loss of life	Value of property destroyed	Character of storm	Remarks
Arkansas, central portion	7	Evening			36,000	Thunderstorms and hail.	In Pine Lake section 10 miles south of Little Rock; 12 homes damaged, $10,000; 1 injury. At Glenwood in Pike County hail as large as eggs; damage to roofs and windows, $6,000. At Forrest City in St. Francis County damage mostly to roofs, windows and a greenhouse, $20,000. "Donut" hail stones, about 1 inch in diameter fell at Hot Springs for a few minutes, caused slight damage.
Union, Ouachita, Calhoun, and Bradley Counties, Ark.	8	Afternoon			1,100,000	do	At El Dorado 4,000 homes and 1,000 cars damaged, estimated at $1,000,000. Hail as large as "tennis balls" (some actual measurements given as 3½ inches in diameter) fell from 8 to 16 minutes. Hail damage also reported in Johnsville, Smackover, and Stephens, with damage at $100,000. 2 persons injured and several hundred chickens killed. Crop damage negligible.
Arkansas, entire State	12			1		Thunderstorms and wind.	Farmers Market Building at Bald Knob leveled. 1 death and 2 injuries. Minor damage in other scattered sections.
Springdale, Ark.	30	Morning		1		Electric	A boy killed by lightning.

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SOLAR RADIATION DATA FOR MAY 1948

[Solar Radiation Investigation Section, I. F. HAND in Charge]

Explanation of Tables 1 and 2 and references to descriptions of instruments, stations, and methods of observation, and to summaries of data, are given in the MONTHLY WEATHER REVIEW, vol. 72, No. 1, January 1944, p. 43. A list of pyrheliometric stations is given on page 45 of that issue. An explanation of the formula used in computing the air mass values for each station listed in Table 1 appears in vol. 75, No. 3, March 1947, p. 47.

TABLE 1.—*Solar radiation intensities during May 1948*

[Gram calories per minute per square centimeter of normal surface]

MADISON, WIS.

Date	Sun's zenith distance A.M. 78.7°	75.7°	70.7°	60.0°	0.0°	Sun's zenith distance P.M. 60.0°	70.7°	75.7°	78.7°	Vapor pressure 7:30 a.m.[1]	1:30 p.m.[1]
	Air mass 4.81	3.84	2.88	1.92	*0.96	1.92	2.88	3.84	4.81		
May	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	mb.	mb.
1				0.94	1.20					11.0	10.6
3	0.74	0.87	0.96	1.06	1.31					7.4	9.1
5	.64	.74								10.6	11.4
6	.87	.96	1.08	1.25	1.44					11.4	9.8
8	.90	1.01	1.13	1.25	1.36					4.8	6.1
14	.71	.81	.96	1.14	1.37					9.4	9.8
17	.43	.55	.70	.92	1.30					10.2	10.6
18	.41	.60	.75	.94	1.43					11.0	11.0
19				1.04	1.32					7.4	9.4
20	.60	.74	.87	1.03	1.29					10.2	16.5
21	.83	.90	1.04	1.19	1.40					11.0	8.1
22	.76	.84	98	1 13	1 35					8.4	11.0
24	77	90	1.01	1.14	1.38					7.2	7.2
25	.62	.74	.90	1.06	1.36					9.8	7.2
26	.65	.79	.91	1.08	1.36					9.8	8.4
27	.55	.68	.81	1.02	1.23					8.7	10.6
29			.92	1.11	1.33					7.2	7.8
Means	.68	.80	.93	1.08	1.34						
Departures	−.05	−.03	−.02	−.02	−.02						

LINCOLN, NEBR.

	Air mass 4.77	3.81	2.86	1.91	*0.95	1.91	2.86	3.81	4.77		
May	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	mb.	mb.
5					1.40	1.22	1.07	0.94	0.81	11.0	14.2
17					1.31	1.10	.94	.82	.73	8.7	11.0
18					1.34	1.10	.90	.79	.71	10.6	14.2
19					1.34	1.10	.90	.82	.75	12.7	13.7
20					1.34	1.08	.86	.73	.58	14.2	15.8
26					1.27	1.03	.84	.73	.62	18.4	11.0
Means					1.33	1.10	.92	.80	.70		
Departures					−.04	−.02	+.02	.00	+.03		

TABLE 1.—*Solar radiation intensities during May 1948*—Con.

[Gram calories per minute per square centimeter of normal surface]

CLIMAX, COLO.

Date	Sun's zenith distance A.M. 3.24	2.59	1.94	1.29	0.0° *0.65	P.M. 1.29	1.94	2.59	3.24	Vapor pressure 7:30 a.m.[1]	1:30 p.m.[1]
	Air mass										
May	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	mb.	mb.
7				1.39							
8				1.34							
13						1.41					
15		1.18	1.28	1.42	1.51			1.15	1.06		
20		1.15	1.26	1.39							
21				1.37				1.14	1.07		
22		1.14	1.28	1.42		1.40	1.27	1.16			
23		1.19	1.29	1.43							
Means		1.16	1.28	1.39	(1.51)	(1.40)	(1.27)	1.15	(1.06)		
Departures		.00	+.07	+.04	−.02	+.06	+.08	+.02	+.02		

TABLE MOUNTAIN, CALIF.

	Air mass 3.76	3.01	2.26	1.51	*0.75	1.51	2.26	3.01	3.76		
May	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	mb.	mb.
1				1.45							
2				1.37							
3				1.40							
5				1.38							
6				1.34							
7				1.40							
9				1.38							
10					1.51						
11					1.52						
12					1.49						
14	1.11	1.20	1.31	1.42							
22				1.41							
23				1.38							
24				1.37							
28				1.43							
29				1.37							
Means	(1.11)	(1.20)	(1.31)	1.39	1.51						
Departures	+.03	+.02	+.03	+.01	+.01						

BLUE HILL, MASS.

	Air mass 4.86	3.89	2.92	1.94	*0.97	1.94	2.92	3.89	4.86		
May	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	mb.	mb.
1		1.04	1.16							6.1	5.1
2	0.81	.91	1.04	1.22	1.50	1.25				6.3	5.7
4	.85	.93	1.05	1.18	1.43					6.2	7.1
6						1.20	1.03			8.6	7.9
19				1.23	1.48					6.3	5.1
23	.76	.81	.91	1.01						9.1	10.5
24				1.01		1.18				12.4	9.4
28							.87	.72		18.0	18.1
Means	.81	.92	1.04	1.13	1.47	1.21	(.95)	(.72)			
Departures	+.15	+.13	+.09	+.04	+.10	+.14	+.06	−.02			

* Extrapolated.

[1] 75th meridian time.

TABLE 2.—*Daily totals and weekly means of solar radiation (direct + diffuse) received on a horizontal surface*

[Gram-calories per square centimeter]

Date	Washington, D. C.	Madison, Wis.	Lincoln, Nebr.	New York, N. Y.	Fresno, Calif.	Fairbanks, Alaska	Columbia, Mo.	Boston, Mass.	Nashville, Tenn.	Twin Falls, Idaho	La Jolla, Calif.	Riverside, Calif.	Blue Hill, Mass.	Newport, R. I.	Salt Lake City, Utah	Put-in-Bay, Ohio	State College, Pa.	Davis, Calif.	Toronto, Canada	Ithaca, N. Y.	Boulder, Colo.	East Wareham, Mass.	Honolulu, T. H.	Pearl Harbor, T. H.	East Lansing, Mich.	Summit, Mont.	Grand Lake, Colo.
1948	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*
Apr. 29	439	629	607	206	420	596	755	263	528	299	646	728	309	376	387	497	369	186	490	244	651	352	694	666	451	480	685
Apr. 30	683	439	333	391	633	532	454	309	596	521	644	641	355	495	440	687	372	508	483	124	668	503	698	613	587	425	755
May 1	320	593	258	637	744	574	793	465	538	404	641	715	529	621	458	656	392	607	566	425	299	612	603	536	458	360	561
May 2	321	188	563	551	762	596	466	622	538	677	605	602	725	721	694	216	448	687	583	483	473	687	473	480	232	522	530
May 3	120	623	134	187	719	256	634	640	401	468	658	698	678	412	656	676	53	587	631	343	602	500	629	368	571	445	793
May 4	374	336	628	442	748	642	494	592	430	660	619	619	730	699	603	252	385	700	494	457	660	672	730	694	186	205	392
May 5	225	381	220	75	725	636	148	344	647	678	639	679	407	240	728	662	61	701	345	77	701	295	586	552	510	673	776
Means	355	456	392	355	679	548	535	462	526	530	636	669	542	509	567	521	297	568	513	307	588	517	630	558	428	444	642
Departures	−112	+14	−55	−74	+51	+116	+73	+83	+70	−10	+72	+119	+85	+43	+17	+98	−123	−65	+115	−83	+81	+79	+34	+2	+94	----	----
May 6	508	184	746	616	747	-----	195	612	129	545	435	-----	677	658	577	192	400	662	348	455	619	504	476	584	65	221	723
May 7	203	661	688	58	782	-----	754	73	689	140	396	-----	122	92	152	73	77	682	81	82	498	125	735	764	116	154	621
May 8	729	590	483	133	747	-----	530	155	681	411	582	-----	217	563	438	654	257	698	197	19	602	444	698	770	560	351	621
May 9	636	92	486	611	757	591	438	512	649	430	622	731	661	672	382	196	536	700	76	166	188	654	625	624	163	263	286
May 10	624	170	164	495	770	569	182	222	586	503	635	730	306	452	564	319	296	710	183	114	292	329	662	600	157	319	662
May 11	657	184	259	557	772	388	83	450	444	596	594	700	547	636	491	522	583	704	345	441	284	575	699	507	74	437	320
May 12	514	149	574	502	768	-----	230	315	391	494	654	700	424	476	609	163	432	663	272	115	471	494	706	683	206	793	567
Means	553	290	486	425	768	-----	345	334	510	458	560	715	422	507	459	303	368	688	215	199	422	446	657	648	191	363	543
Departures	+73	−162	+36	−17	+121	-----	−129	−65	+32	−90	−2	+167	−43	+31	−81	−104	−66	+20	−174	−211	−58	−21	+47	+73	−181	----	----
May 13	204	250	548	45	786	634	467	39	216	548	618	704	82	75	562	406	36	734	205	27	602	97	666	614	271	467	780
May 14	299	632	554	100	781	548	542	63	708	699	675	720	103	198	696	404	122	755	148	52	652	148	655	632	439	304	702
May 15	643	414	703	474	767	550	152	237	428	657	636	691	257	334	690	336	605	719	612	464	657	249	759	732	155	810	810
May 16	168	435	752	45	757	580	739	220	222	568	589	689	290	341	589	676	151	712	508	114	704	376	562	418	485	546	743
May 17	456	606	708	338	710	537	780	144	716	665	549	720	164	203	685	429	455	458	301	297	450	148	594	418	375	688	642
May 18	479	726	681	391	398	546	762	225	617	335	661	645	295	293	118	670	270	245	576	44	501	316	669	596	480	575	460
May 19	693	711	730	758	404	429	763	529	693	611	537	377	645	705	652	712	722	239	686	538	526	596	743	642	505	180	590
Means	420	539	668	307	657	546	601	208	514	583	609	650	262	307	570	519	338	552	434	219	584	276	664	579	387	510	675
Departures	−50	+69	+157	−141	+4	+82	+108	−142	+55	−15	+60	+111	−210	−170	−23	+135	−72	−83	−34	−189	+124	−152	+37	−2	+49	----	----
May 20	490	682	719	724	389	600	779	149	689	656	680	726	212	392	684	659	420	182	190	372	651	282	710	605	515	130	546
May 21	638	756	634	461	734	608	629	28	694	518	698	776	66	210	703	686	562	642	440	279	395	114	731	711	576	615	788
May 22	733	723	540	266	772	351	794	157	731	527	694	753	142	346	697	724	498	748	423	180	651	229	615	682	554	199	829
May 23	668	736	236	614	795	441	468	602	664	698	582	732	659	672	746	466	578	710	380	70	570	646	644	557	566	353	811
May 24	613	737	733	624	726	512	736	610	298	698	463	527	695	703	710	752	590	657	432	254	387	696	753	634	523	636	530
May 25	271	762	677	56	786	439	772	242	611	691	377	361	415	476	592	711	713	690	703	508	243	436	716	691	557	760	452
May 26	86	727	750	229	791	518	708	116	576	668	383	412	205	174	639	731	507	736	653	517	-----	178	732	675	623	555	491
Means	500	732	613	425	713	496	698	272	609	6 3	554	612	342	425	682	676	566	624	461	312	483	369	700	651	559	508	635
Departures	+3	+235	+72	−33	+52	+47	+164	−134	+95	+36	+52	+70	−111	−20	+86	+170	+90	−8	+31	−142	+25	−94	+65	+63	+165	----	----
May 27	229	712	738	480	717	339	660	405	351	381	395	208	388	370	522	670	406	521	598	472	-----	346	506	453	613	50	445
May 28	470	398	651	564	788	659	617	539	168	503	642	602	667	585	537	649	250	658	516	362	249	588	615	614	554	147	390
May 29	301	732	259	488	757	533	636	513	350	476	676	757	573	640	651	737	315	402	703	283	498	574	718	608	651	140	608
May 30	166	653	379	164	229	437	320	78	706	434	576	388	90	194	646	678	586	157	586	495	422	187	712	659	606	703	652
May 31	384	734	629	83	687	618	626	66	714	632	289	132	106	66	677	716	524	544	652	456	251	78	681	618	613	711	626
June 1	538	718	727	263	782	197	-----	325	705	596	184	209	297	209	329	649	710	721	569	486	475	202	642	608	576	729	624
June 2	476	737	590	657	613	586	-----	529	621	369	480	214	555	613	350	526	733	725	672	508	642	583	624	617	527	724	770
Means	366	669	568	386	653	481	572	351	516	484	463	358	382	382	530	661	503	533	627	438	423	365	643	597	591	526	588
Departures	−147	+173	+46	−104	−15	−11	+173	−80	+12	−86	−12	2−168	−133	−133	+40	+119	+27	−33	+160	−32	−55	−111	+11	−2	+175	----	----

ACCUMULATED DEPARTURES ON JUNE 2, 1948

	−2478	+3297	+3234	−4375	+5530	-----	+5873	−3388	+1757	−1155	+49	+5439	−3738	−2030	−1477	+5635	−2492	−2793	+2863	−8533	+791	−2380	----	----	+3395	----	----

TABLE 3.—*Daily totals and weekly means of solar and sky radiation plus the radiation reflected from the ground, as received on a vertical surface facing south at Blue Hill, Mass., during May 1948*

Date	29	30	1	2	3	4	5	Mean	6	7	8	9	10	11	12	Mean	13	14	15	16
Gm. cal/cm²	167	168	245	322	329	318	217	252	314	50	94	294	148	258	225	198	51	57	134	124

Date	17	18	19	Mean	20	21	22	23	24	25	26	Mean	27	28	29	30	31	1	2	Mean
Gm. cal/cm²	82	150	269	124	93	28	79	278	261	217	114	153	207	295	286	47	59	160	260	186

U. S. GOVERNMENT PRINTING OFFICE: 1948

Chart I. Departure (°F.) of the Mean Temperature from the Normal, and Wind Roses for Selected Stations, May 1948

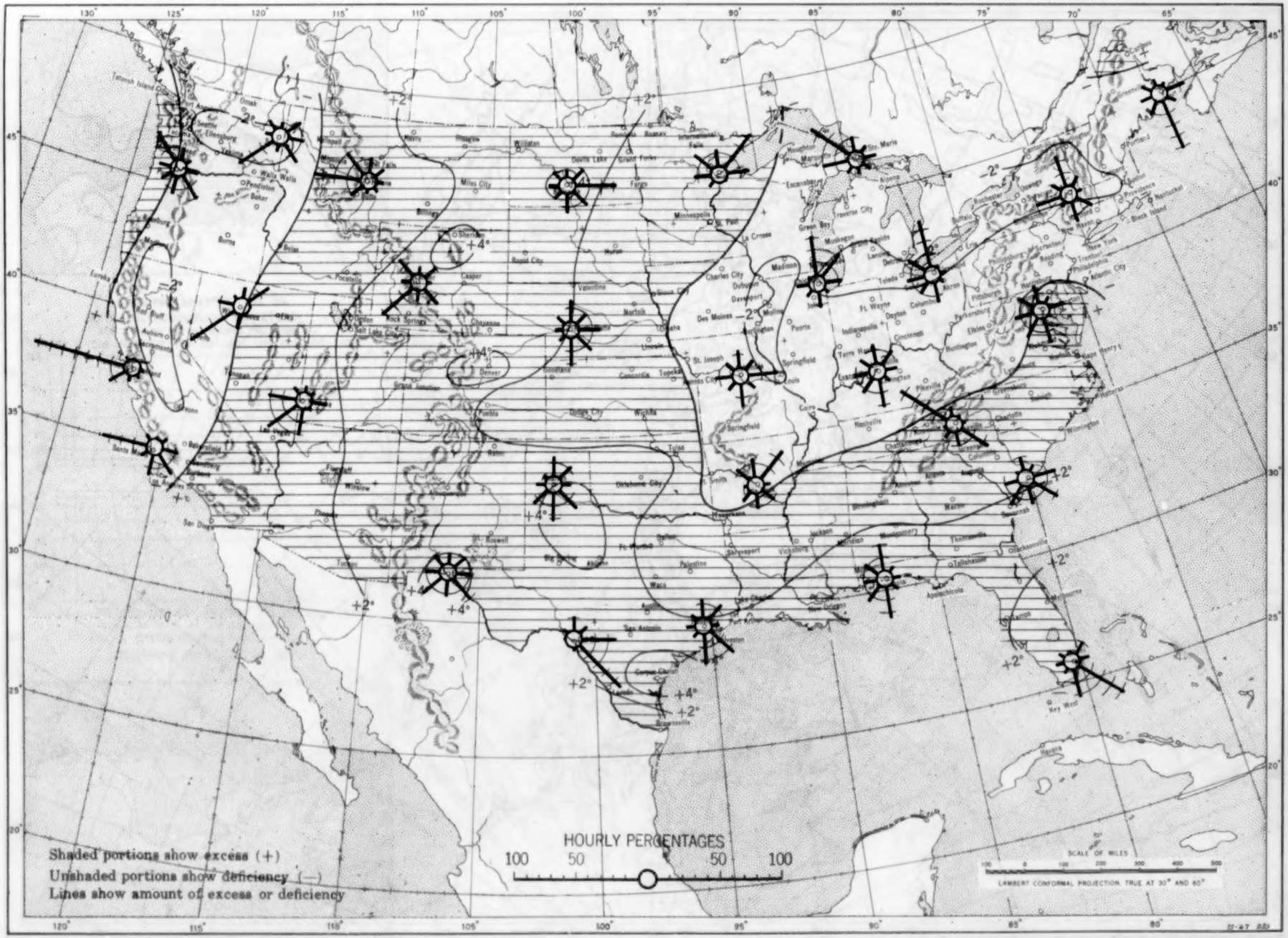
Shaded portions show excess (+)
Unshaded portions show deficiency (—)
Lines show amount of excess or deficiency
HOURLY PERCENTAGES
100 50 50 100
SCALE OF MILES
LAMBERT CONFORMAL PROJECTION, TRUE AT 30° AND 60°

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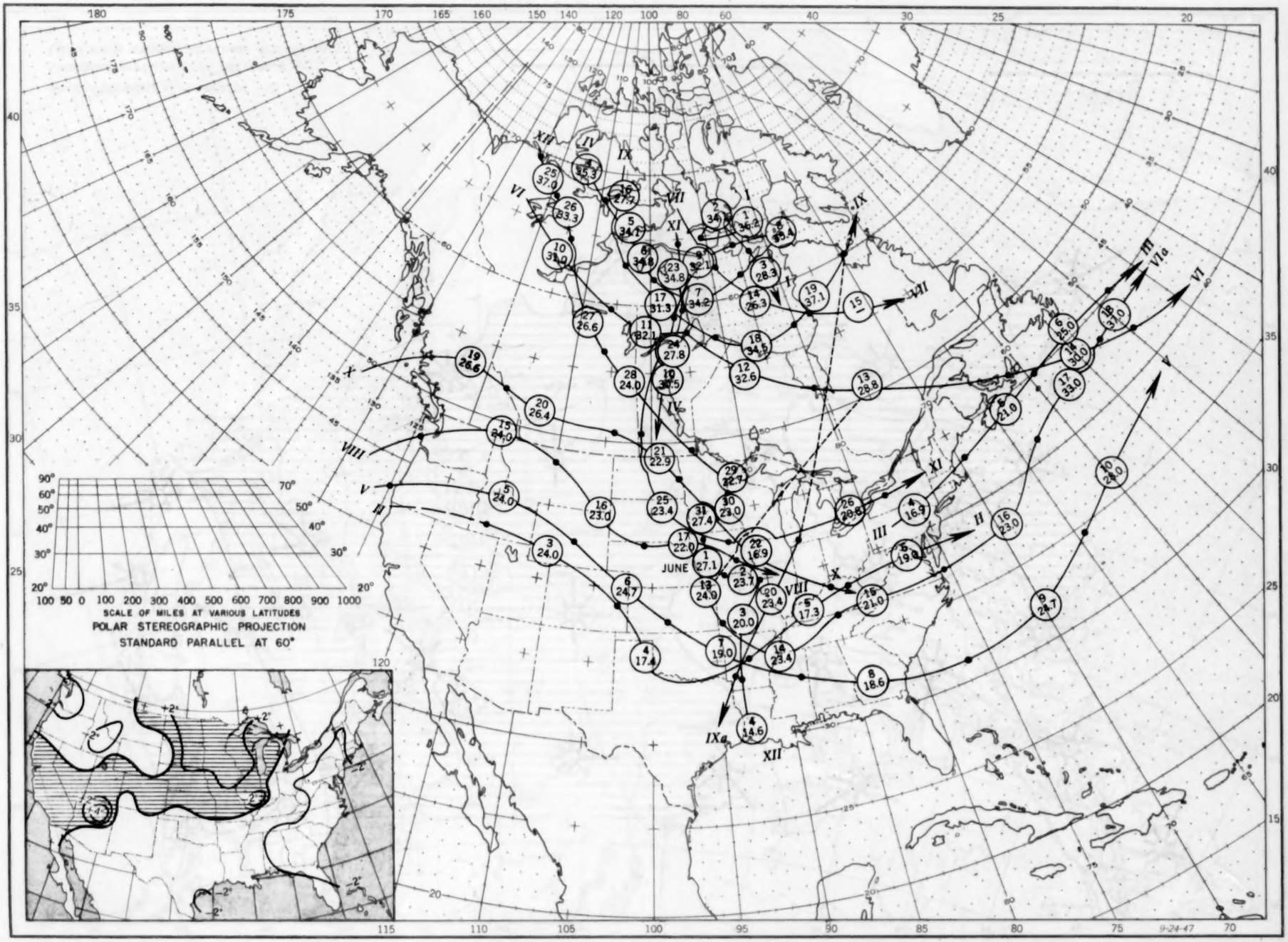
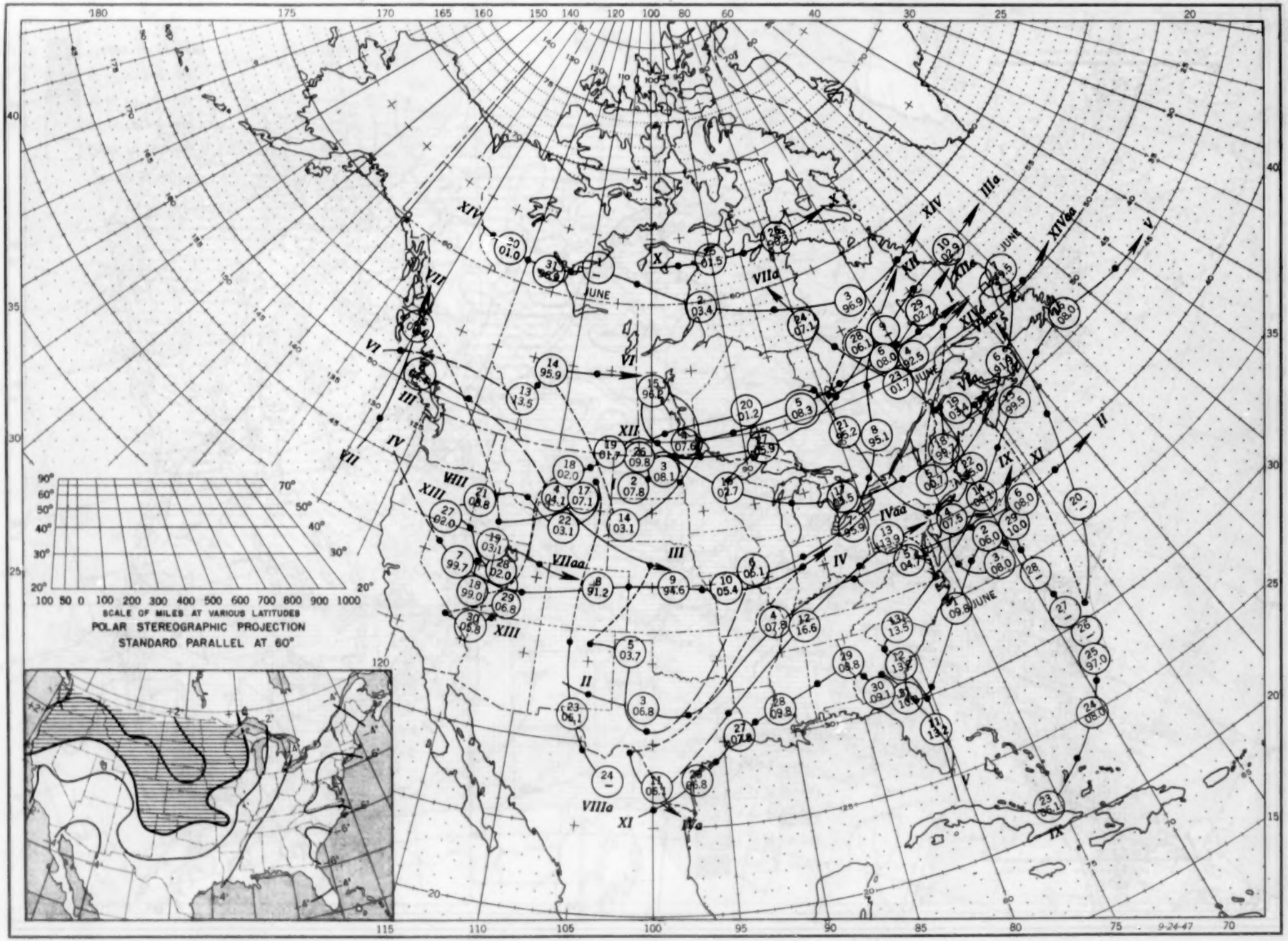
Chart II. Tracks of Centers of Anticyclones, May 1948. (Inset) Departure of Monthly Mean Pressure from Normal



Circle indicates position of anticyclone at 7:30 a. m. (75th meridian time), with barometric reading. Dot indicates position of anticyclone at 7:30 p. m. (75th meridian time)

Chart III. Tracks of Centers of Cyclones, May 1948. (Inset) Change in Mean Pressure from Preceding Month



Circle indicates position of cyclone at 7:30 a. m. (75th meridian time), with barometric reading. Dot indicates position of cyclone at 7:30 p. m. (75th meridian time)

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Chart IV. Percentage of Clear Sky Between Sunrise and Sunset, May 1948

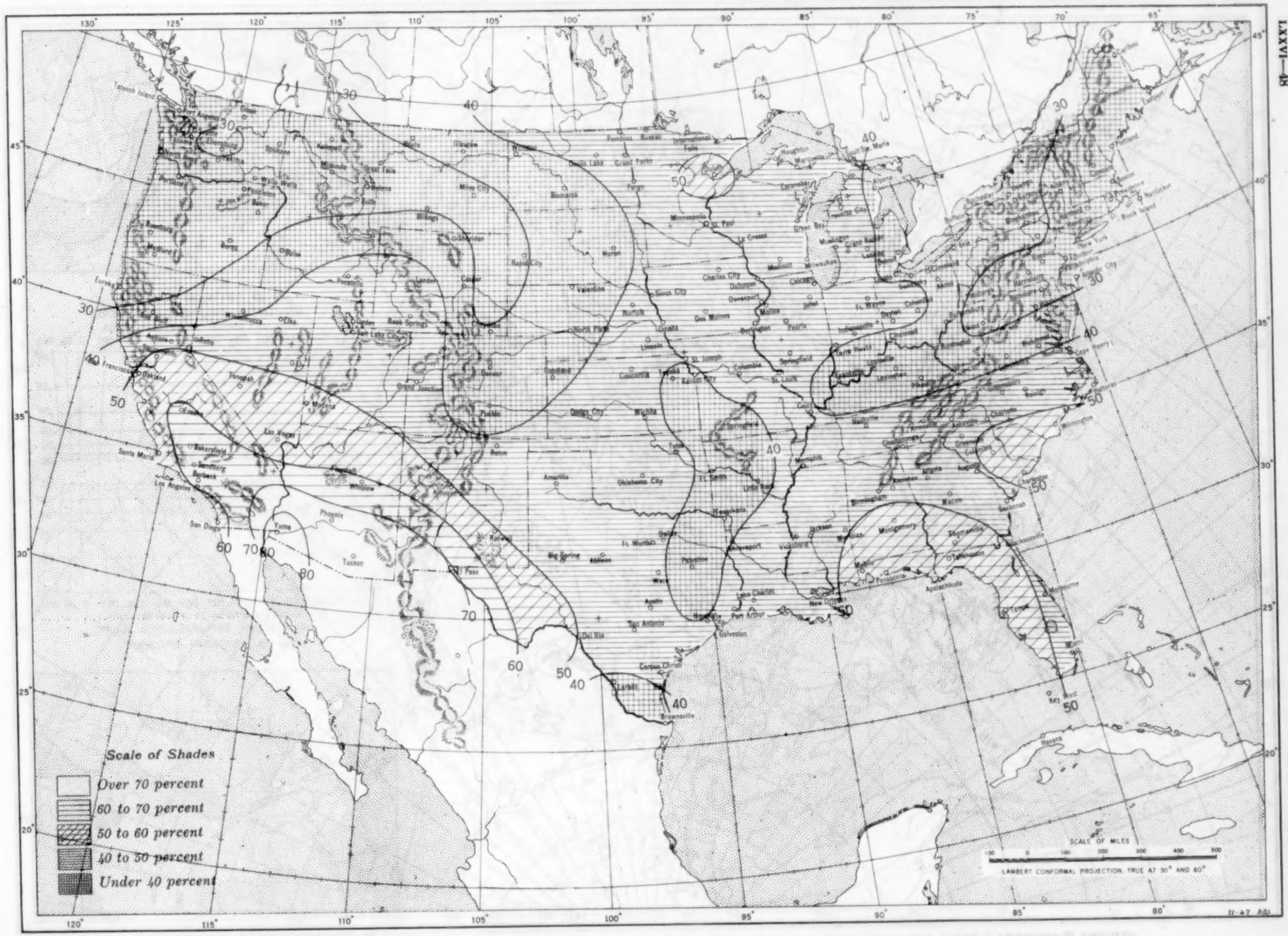
Scale of Shades
Over 70 percent
60 to 70 percent
50 to 60 percent
40 to 50 percent
Under 40 percent
SCALE OF MILES
LAMBERT CONFORMAL PROJECTION, TRUE AT 30° AND 60°

Chart V. Total Precipitation, Inches, May 1948. (Inset) Departure of Precipitation from Normal

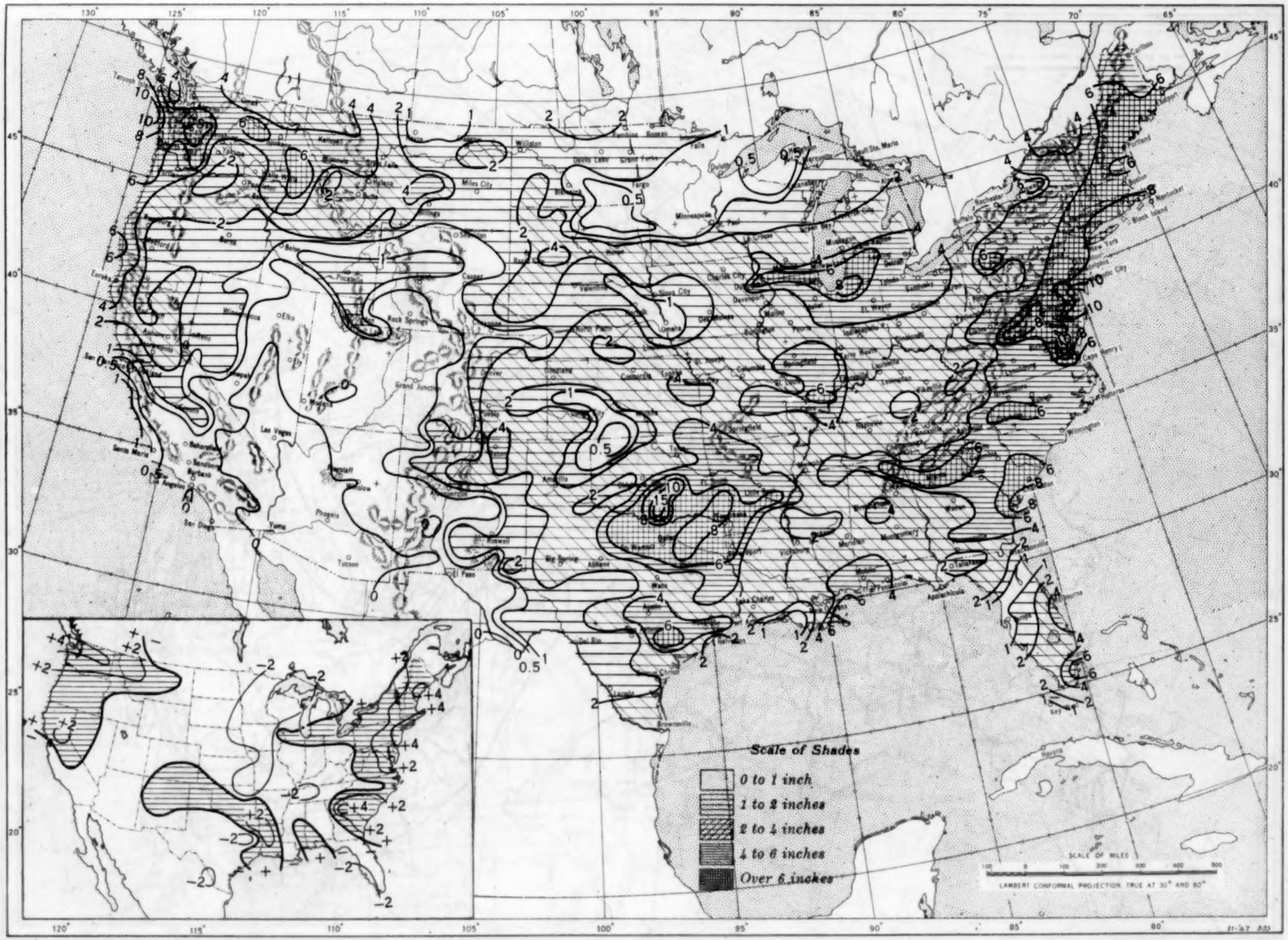
Scale of Shades
0 to 1 inch
1 to 2 inches
2 to 4 inches
4 to 6 inches
Over 6 inches
SCALE OF MILES
LAMBERT CONFORMAL PROJECTION TRUE AT 30° AND 60°

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Chart VI. Isobars (mb.) at Sea Level and Isotherms (°F.) at Surface; Prevailing Winds, May 1948

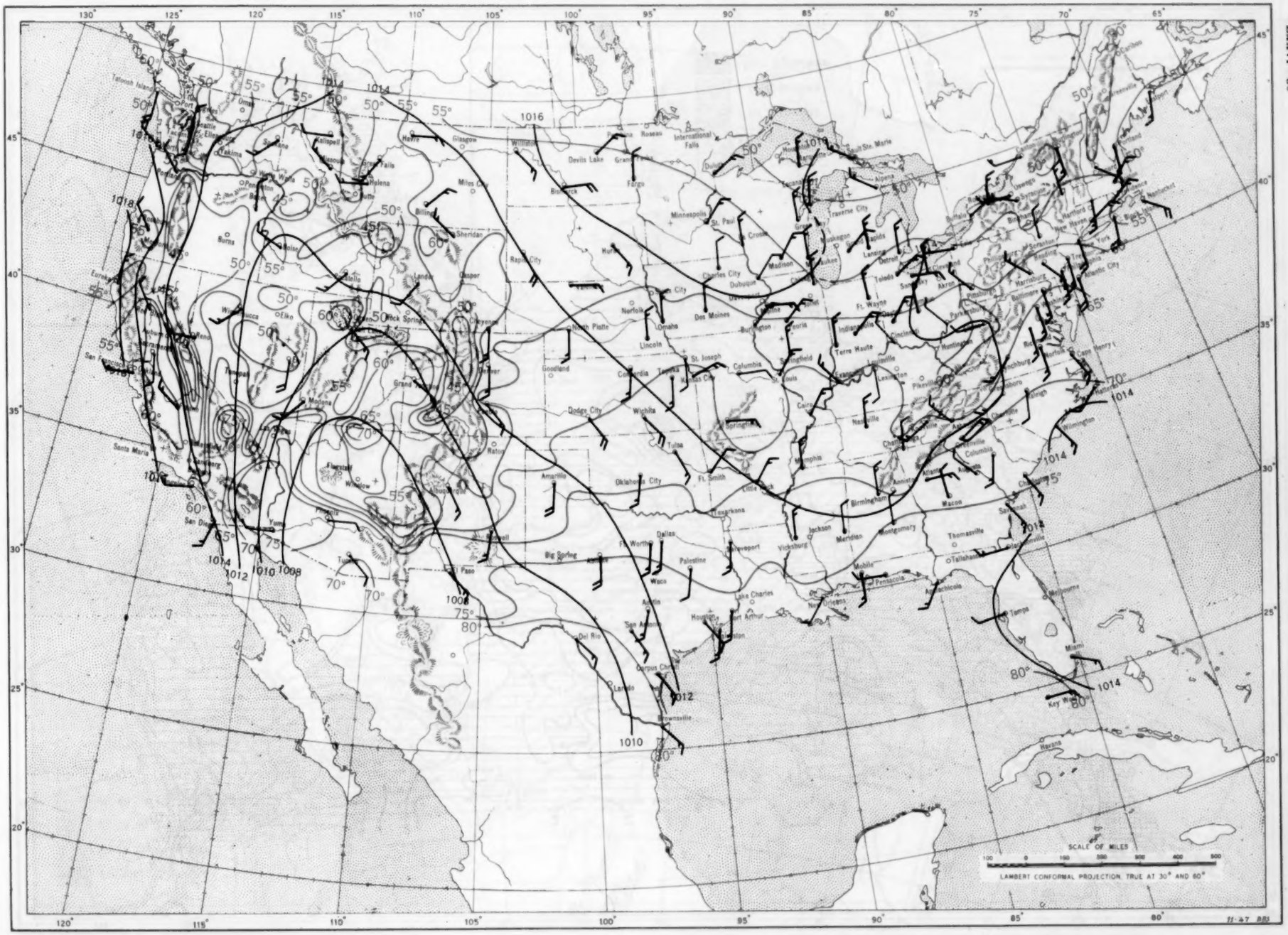
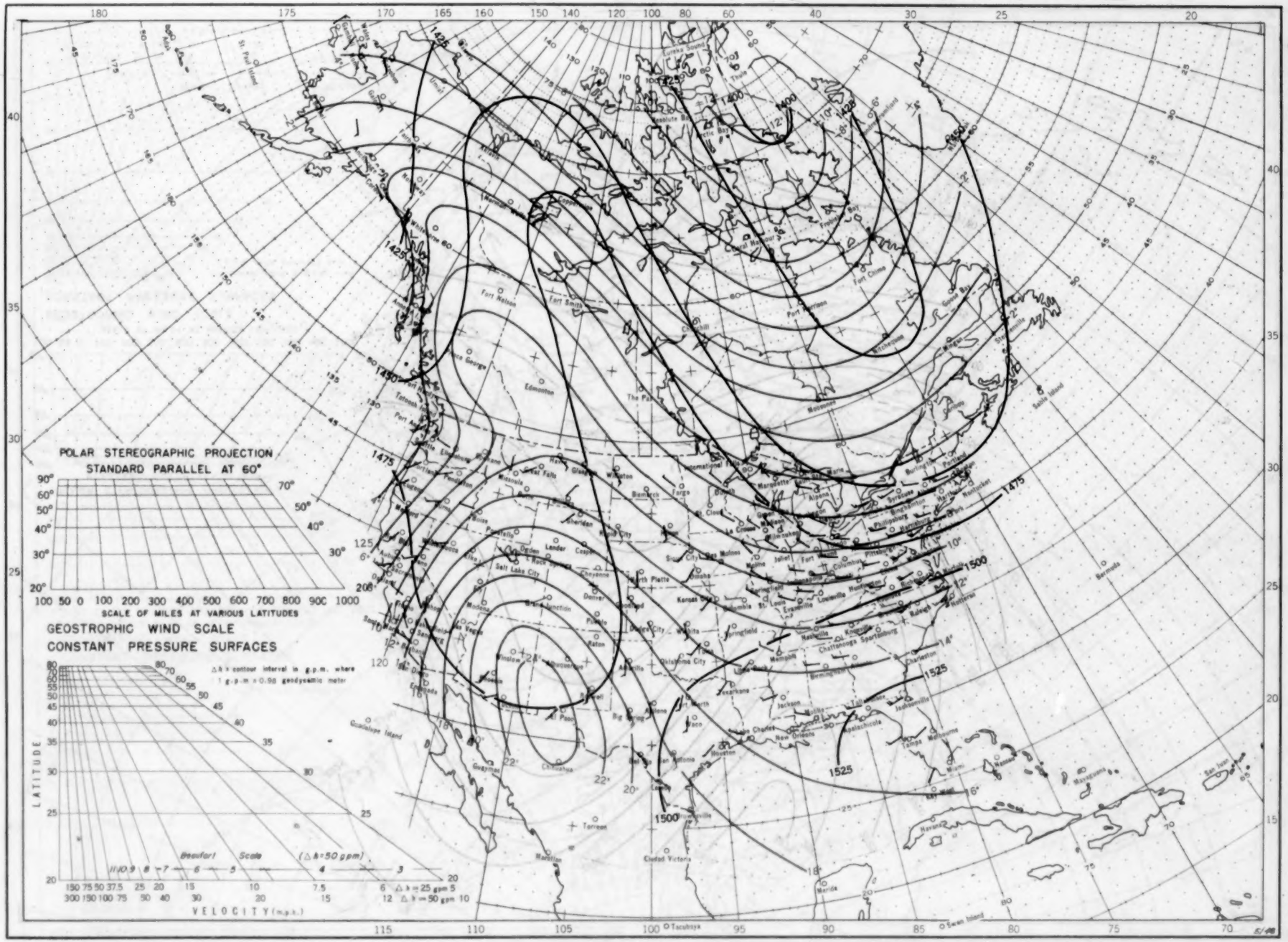
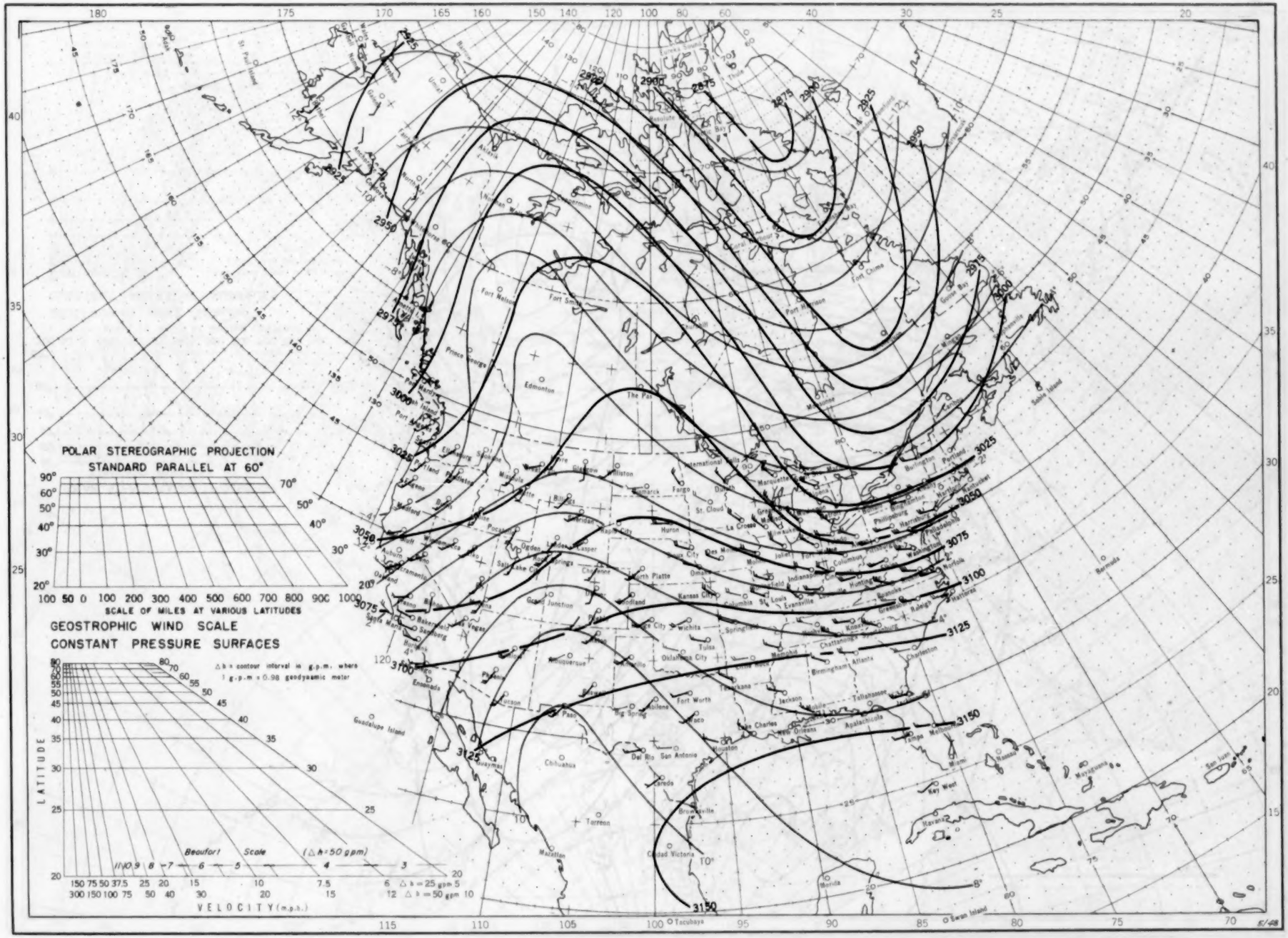


Chart VIII, May 1948. Contour Lines of Dynamic Height (Geopotential) in Units of 0.98 Dynamic Meters and Isotherms in Degrees Centigrade for the 850-millibar Pressure Surface, and Resultant Winds at 1,500 Meters (m. s. l.)



Contour lines and isotherms based on radiosonde observations at 0300 G. C. T. Winds indicated by black arrows based on pilot balloon observations at 2200 G. C. T.; those indicated by red arrows based on rawins taken at 0300 G. C. T.

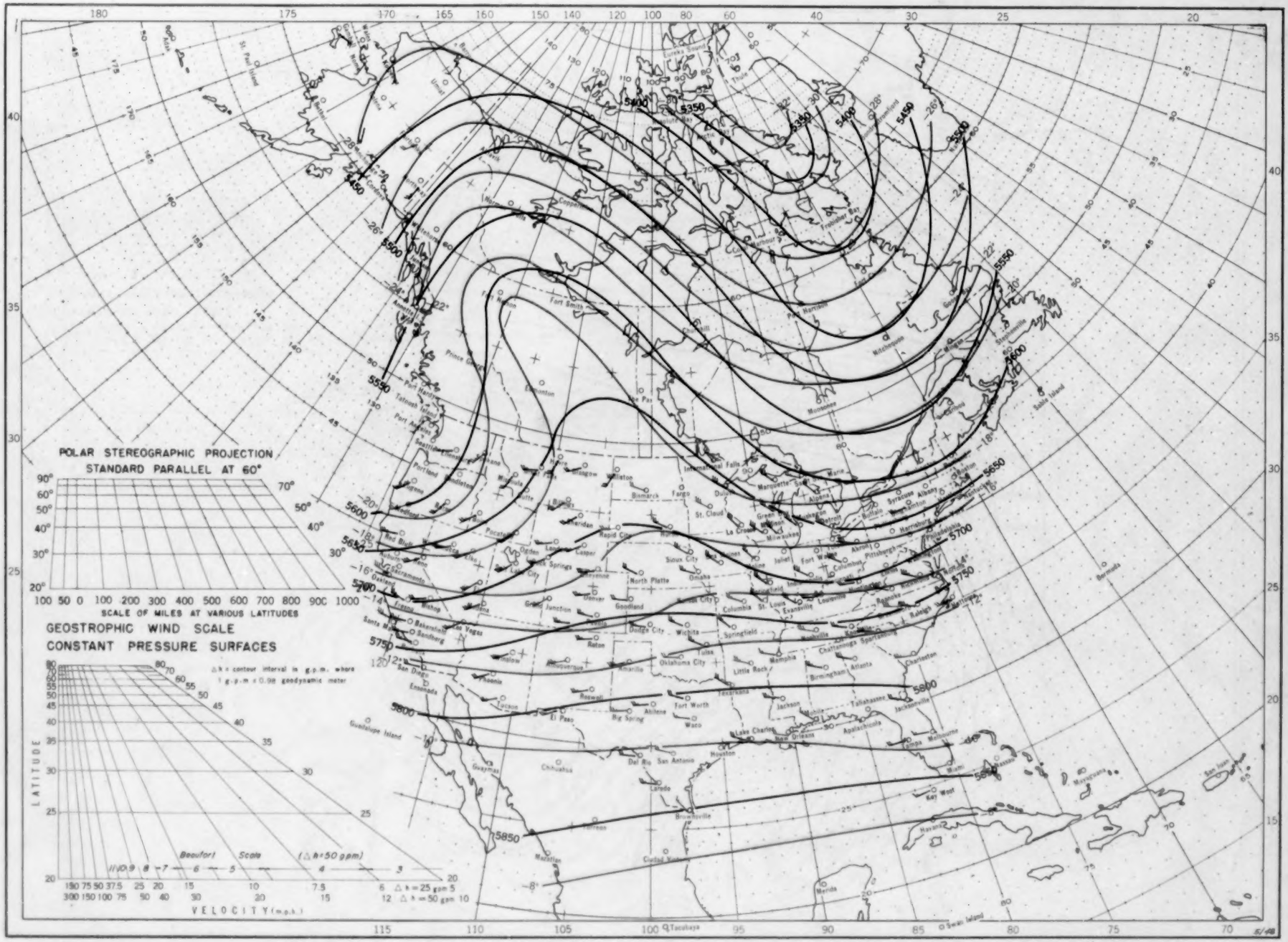
Chart IX, May 1948. Contour Lines of Dynamic Height (Geopotential) in Units of 0.98 Dynamic Meters and Isotherms in Degrees Centigrade for the 700-millibar Pressure Surface, and Resultant Winds at 3,000 Meters (m. s. l.)



Contour lines and isotherms based on radiosonde observations at 0300 G. C. T. Winds indicated by black arrows based on pilot balloon observations at 2200 G. C. T.; those indicated by red arrows based on rawins taken at 0300 G. C. T.

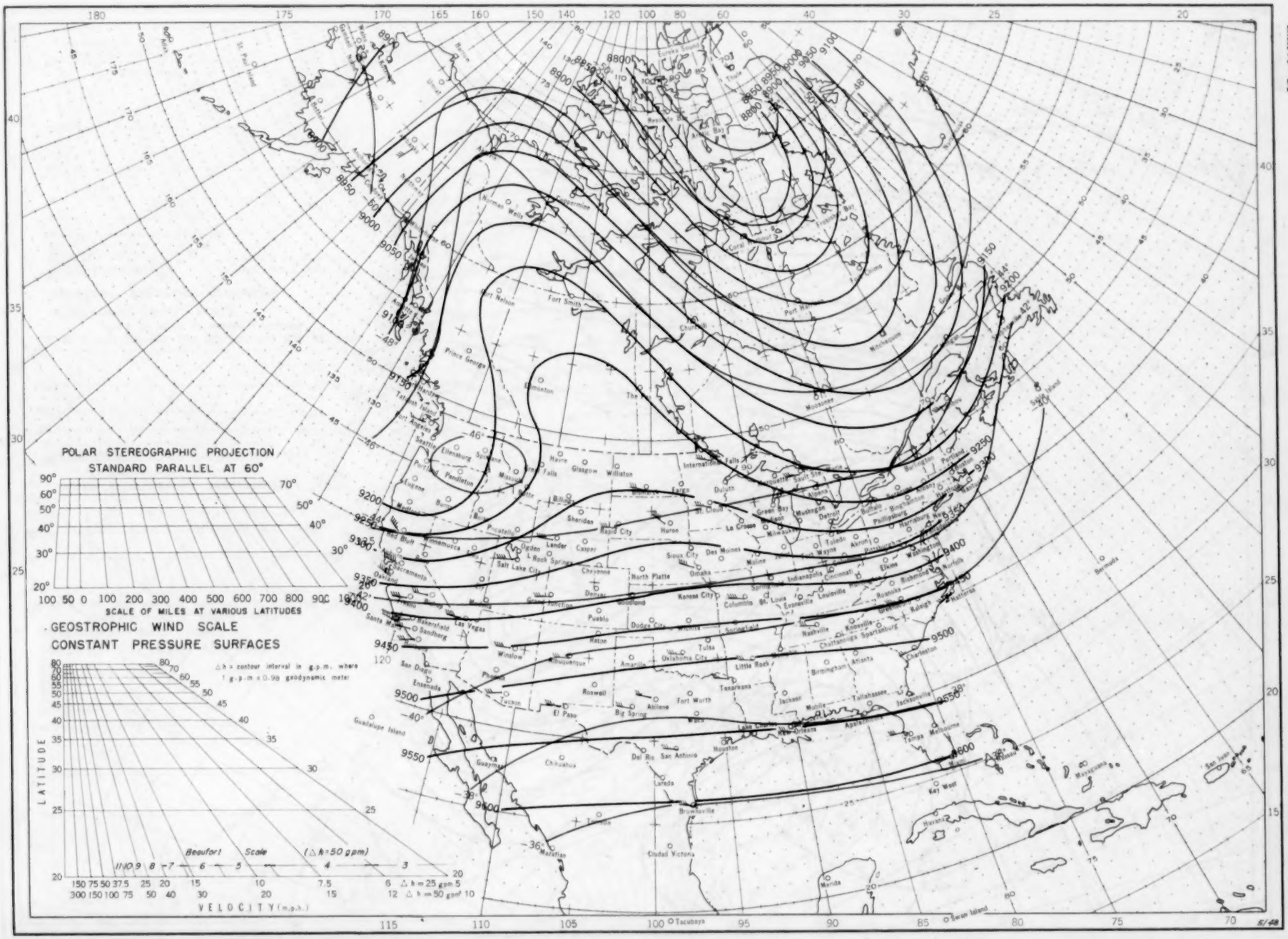
those indicated by red arrows based on rawins taken at 0300 G. C. T.

Chart X, May 1948. Contour Lines of Dynamic Height (Geopotential) in Units of 0.98 Dynamic Meters and Isotherms in Degrees Centigrade for the 500-millibar Pressure Surface, and Resultant Winds at 5,000 Meters (m. s. l.)



Contour lines and isotherms based on radiosonde observations at 0300 G. C. T. Winds indicated by black arrows based on pilot balloon observations at 2200 G. C. T.; those indicated by red arrows based on rawins taken at 0300 G. C. T.

Chart XI, May 1948. Contour Lines of Dynamic Height (Geopotential) in Units of 0.98 Dynamic Meters and Isotherms in Degrees Centigrade for the 300-millibar Pressure Surface, and Resultant Winds at 10,000 Meters (m. s. l.)


POLAR STEREOGRAPHIC PROJECTION
STANDARD PARALLEL AT 60°
SCALE OF MILES AT VARIOUS LATITUDES
GEOSTROPHIC WIND SCALE
CONSTANT PRESSURE SURFACES
LATITUDE
VELOCITY (m.p.h.)
Beaufort Scale
Δh = contour interval in g.p.m. where 1 g.p.m. = 0.98 geodynamic meter

Contour lines and isotherms based on radiosonde observations at 0300 G. C. T. Winds indicated by black arrows based on pilot balloon observations at 2200 G. C. T.; those indicated by red arrows based on rawins taken at 0300 G. C. T.